Jordan Lake
Water Supply Storage Allocation
Round Three

Public Hearing

March 18, 2002

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NC Division of Water Resources

Public Hearing Agenda

- Lead Hearing Officer's Remarks
- Division of Water Resources Presentation
- Public Comments

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DWR Staf

- What are we allocating?
- Why are we recommending allocations?
- How did we develop our recommendations?
- What are the impacts?

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What are we allocating?

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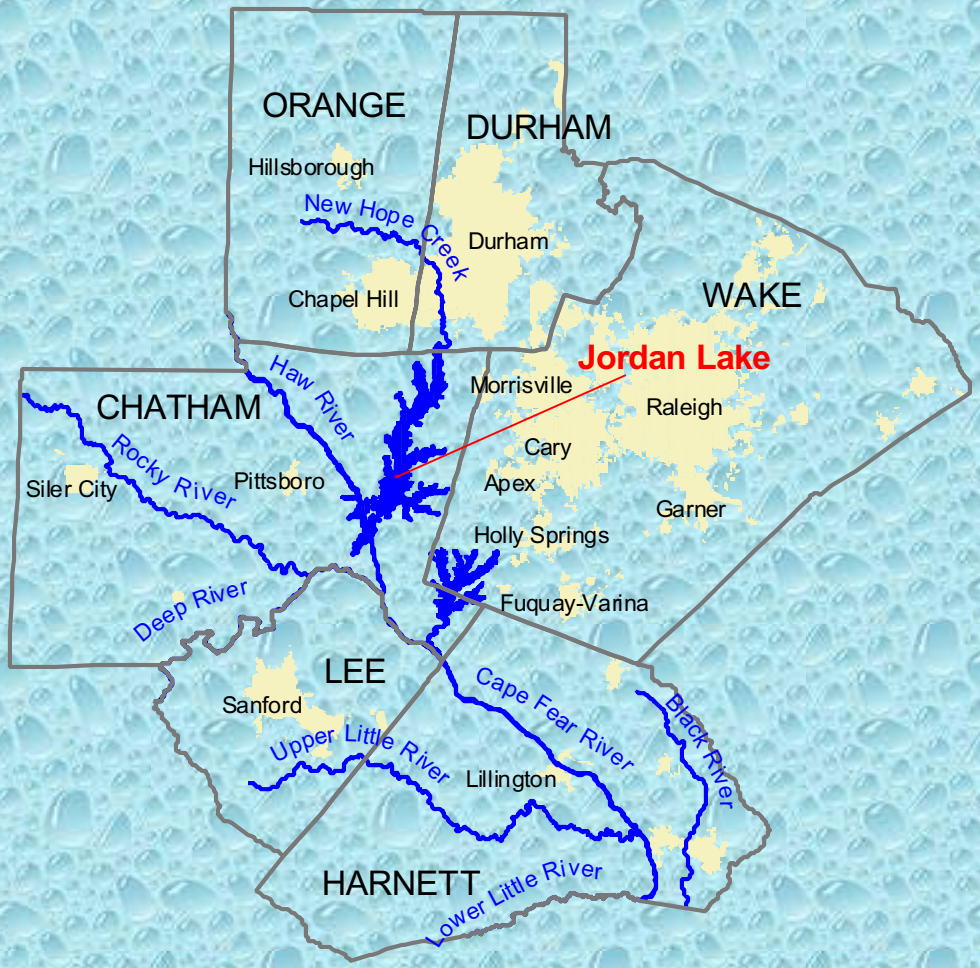
Jordan Lake



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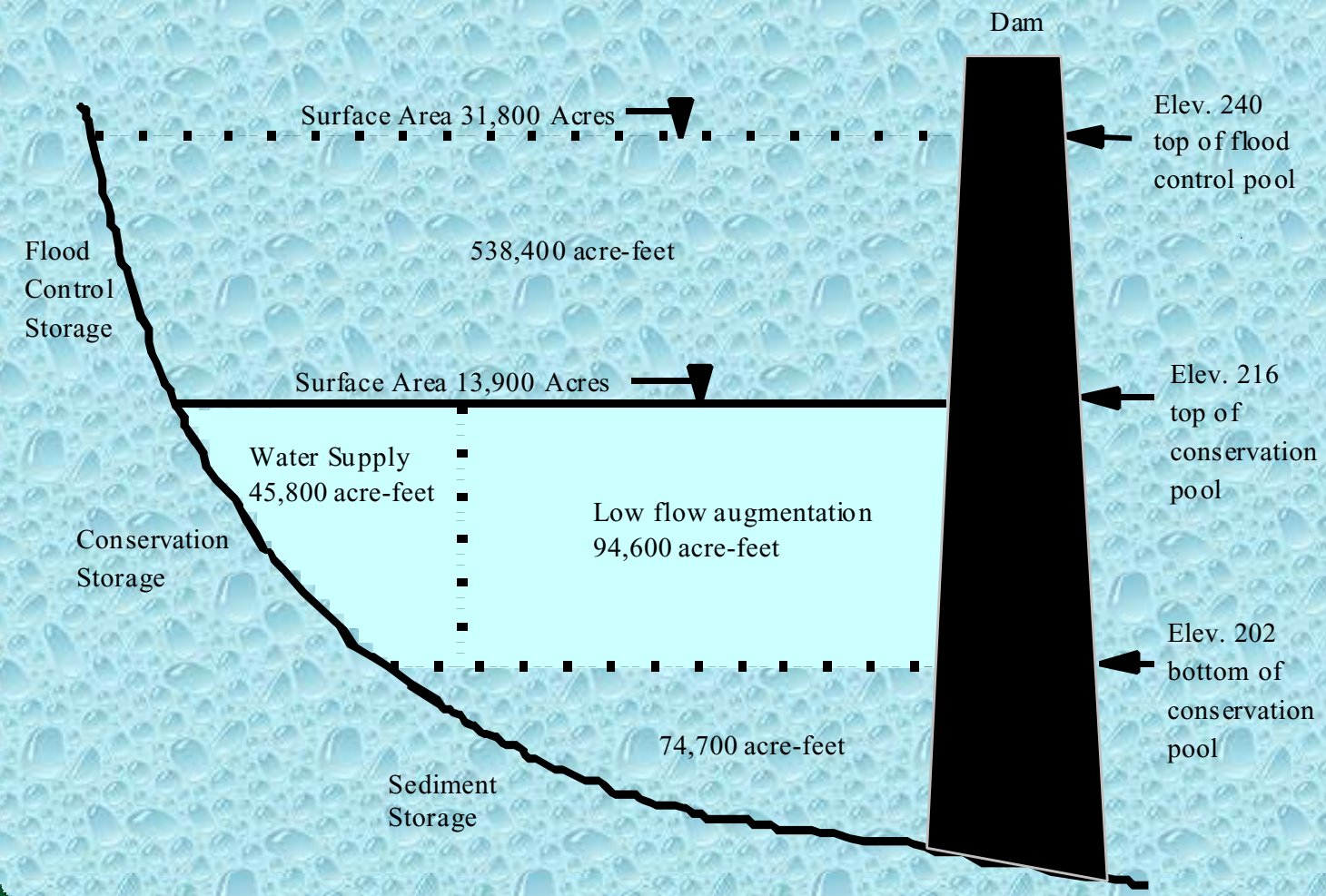
Jordan Lake Operational Pools



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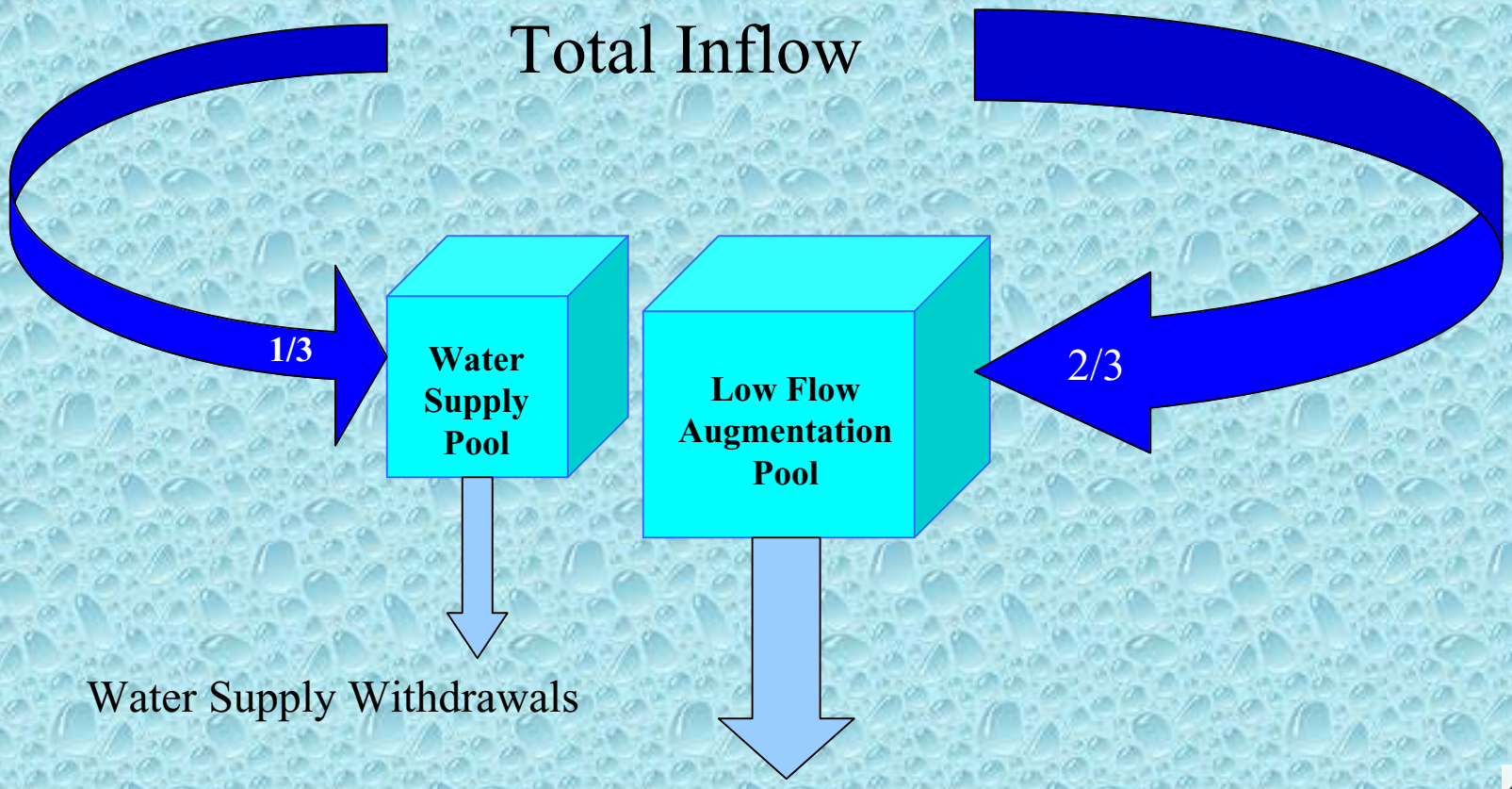
Jordan Lake Conservation Pool



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Low Flow Augmentation Pool

- Approximately 2/3rds of the Conservation Storage
- Receives 2/3rds of all inflow to the lake
- Dedicated to maintaining a flow target at Lillington

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Water Supply Storage Pool

- Approximately 1/3rd of the Conservation Storage
- Receives 1/3rd of all inflow to the lake
- Dedicated to public water supply storage
- Yields 100 mgd (1% allocation = 1 mgd)

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Current Allocations

	Level I (mgd)	Level II (mgd)	**Total (mgd)**
Towns of Cary & Apex	21.0	0.0	**21.0**
Chatham County	4.0	2.0	**6.0**
Town of Holly Springs	0.0	2.0	**2.0**
Town of Morrisville	2.0	0.5	**2.5**
Orange County	0.0	1.0	**1.0**
Orange Water & Sewer Authority	0.0	10.0	**10.0**
Wake County - RTP	1.5	0.0	**1.5**
Total	28.5	15.5	**44.0**

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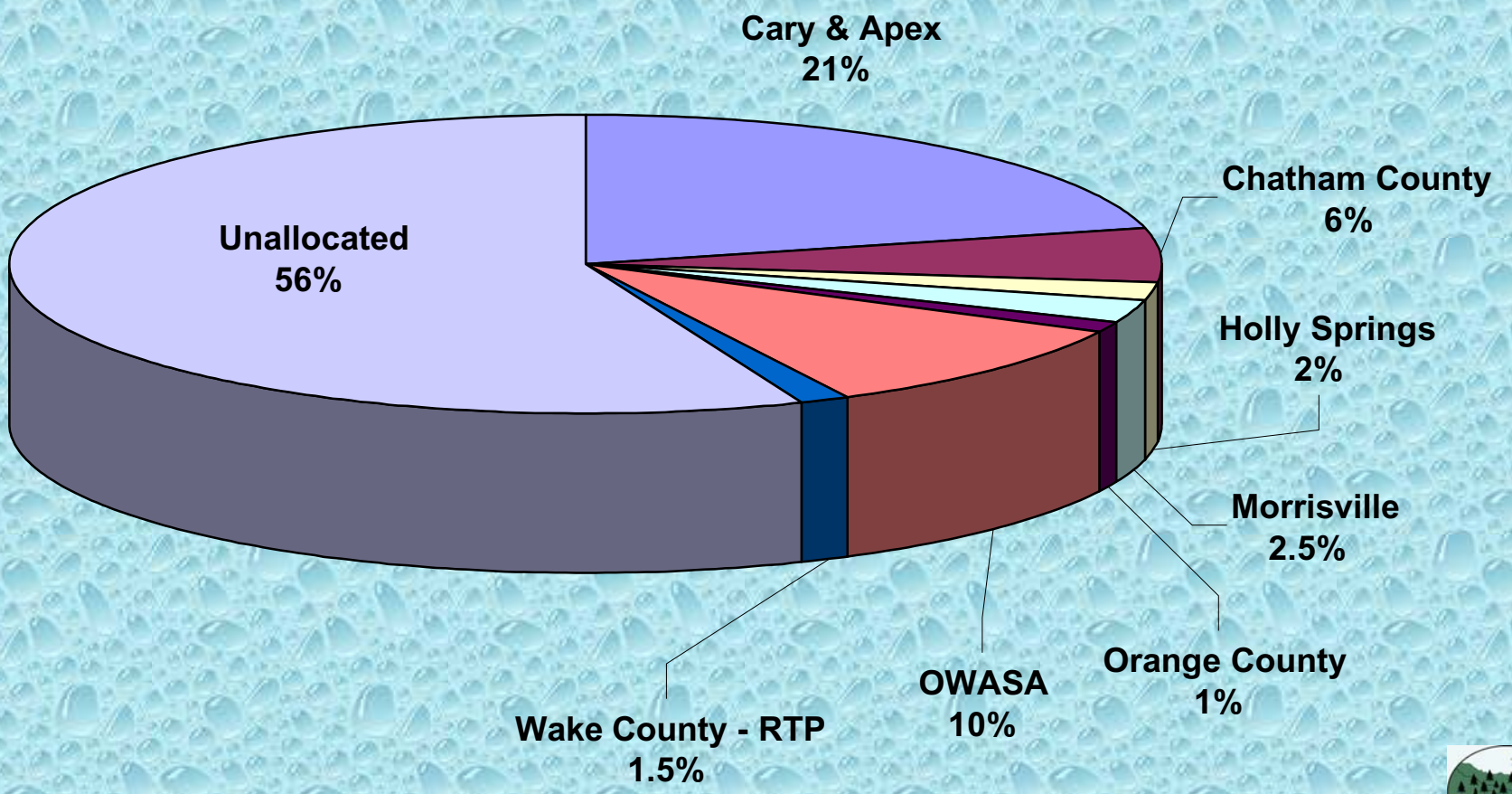
Current Allocations



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Why are we recommending allocations?

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Allocation Rule

- The state purchased 32.62 percent of the lake's storage to increase the availability of municipal and industrial water supplies.

- The Environmental Management Commission will assign the storage to local governments having a need for water supply capacity

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Allocation Criteria

- Projected water supply needs for a period not to exceed 30 years
- Alternative water sources available
- Diversions from the lake's watershed limited to 50% of the water supply storage

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Recommended Allocations

	Level I (mgd)	Level II (mgd)	**Total (mgd)**
Towns of Cary & Apex	32.0	0.0	**32.0**
Chatham County	6.0	0.0	**6.0**
City of Durham	10.0	0.0	**10.0**
City of Fayetteville	0.0	0.0	**0.0**
Harnett County	0.0	0.0	**0.0**
Town of Holly Springs	0.0	0.0	**0.0**
Town of Morrisville	3.5	0.0	**3.5**
Orange County	0.0	1.0	**1.0**
Orange Water & Sewer Authority	0.0	5.0	**5.0**
City of Sanford	0.0	0.0	**0.0**
Wake County - RTP	3.5	0.0	**3.5**
Total	55.0	6.0	**61.0**

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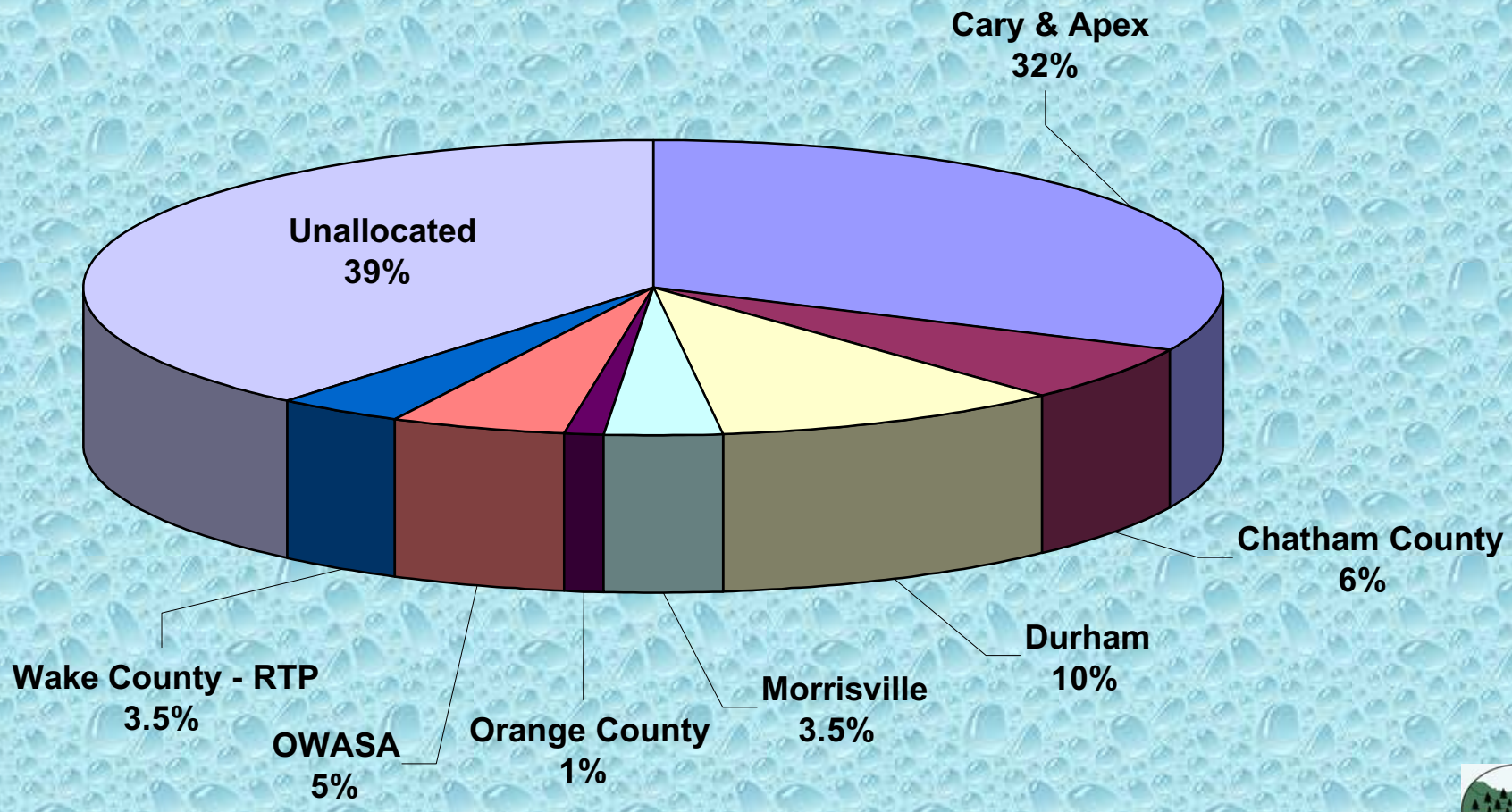
Recommended Allocations



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How did we develop our recommendations?

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Allocation Process

February-June 2000	DWR holds stakeholder meetings and defines process for Round Three
July 2000	EMC directs DWR to begin Round 3
August 2000	DWR sends notice to local governments
August-October 2000	DWR holds stakeholder meetings and defines applications and methods
October 2000	DWR sends application packets
December 2000	DWR receives draft applications
January-April 2001	DWR analyzes draft applications
January-December 2001	DWR develops Cape Fear River Basin Water Supply Plan, Draft 1
April 2001	DWR sends comments to applicants
May 2001	DWR receives final applications
June-October 2001	DWR analyzes final applications and develops recommendations
October 2001	DWR publishes recommendations
December 2001	DWR publishes Cape Fear River Basin Water Supply Plan, Draft 1
January-March 2002	DWR develops Cape Fear River Basin Water Supply Plan, Draft 2
March 2002	DWR publishes Cape Fear River Basin Water Supply Plan, Draft 2
March 2002	**EMC holds public hearing**
April 2002	DWR compiles public comments
April-? 2002	DWR works with public hearing officers to develop final recommendations
? 2002	EMC makes allocation decision

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Applicants

Applicant	Initial Interest	Dropped Out	Final Application Received
Towns of Cary & Apex	✓		✓
Chatham County	✓		✓
Town of Pittsboro	✓		
Town of Siler City	✓		
City of Durham	✓		✓
City of Fayetteville	✓		✓
Harnett County	✓		✓
Town of Holly Springs	✓		✓
Town of Morrisville	✓		✓
Orange County			✓
OWASA			✓
City of Sanford	✓		✓
Wake County - RTP	✓		✓
City of Greensboro	✓	✓	
Town of Mount Olive	✓	✓	

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Requests & Recommendations

	Total Requested Allocation			Total Recommended Allocation		
	Level I (mgd)	Level II (mgd)	**Total (mgd)**	Level I (mgd)	Level II (mgd)	**Total (mgd)**
Towns of Cary & Apex	34.0	10.0	**44.0**	32.0	0.0	**32.0**
Chatham County	6.0	4.5	**10.5**	6.0	0.0	**6.0**
City of Durham	16.0	4.0	**20.0**	10.0	0.0	**10.0**
City of Fayetteville	10.0	0.0	**10.0**	0.0	0.0	**0.0**
Harnett County	0.0	18.0	**18.0**	0.0	0.0	**0.0**
Town of Holly Springs	10.0	6.0	**16.0**	0.0	0.0	**0.0**
Town of Morrisville	4.0	1.0	**5.0**	3.5	0.0	**3.5**
Orange County	0.0	1.0	**1.0**	0.0	1.0	**1.0**
Orange Water & Sewer Auth	0.0	5.0	**5.0**	0.0	5.0	**5.0**
City of Sanford	0.0	28.0	**28.0**	0.0	0.0	**0.0**
Wake County - RTP	3.5	2.0	**5.5**	3.5	0.0	**3.5**
Total	83.5	79.5	**163.0**	55.0	6.0	**61.0**

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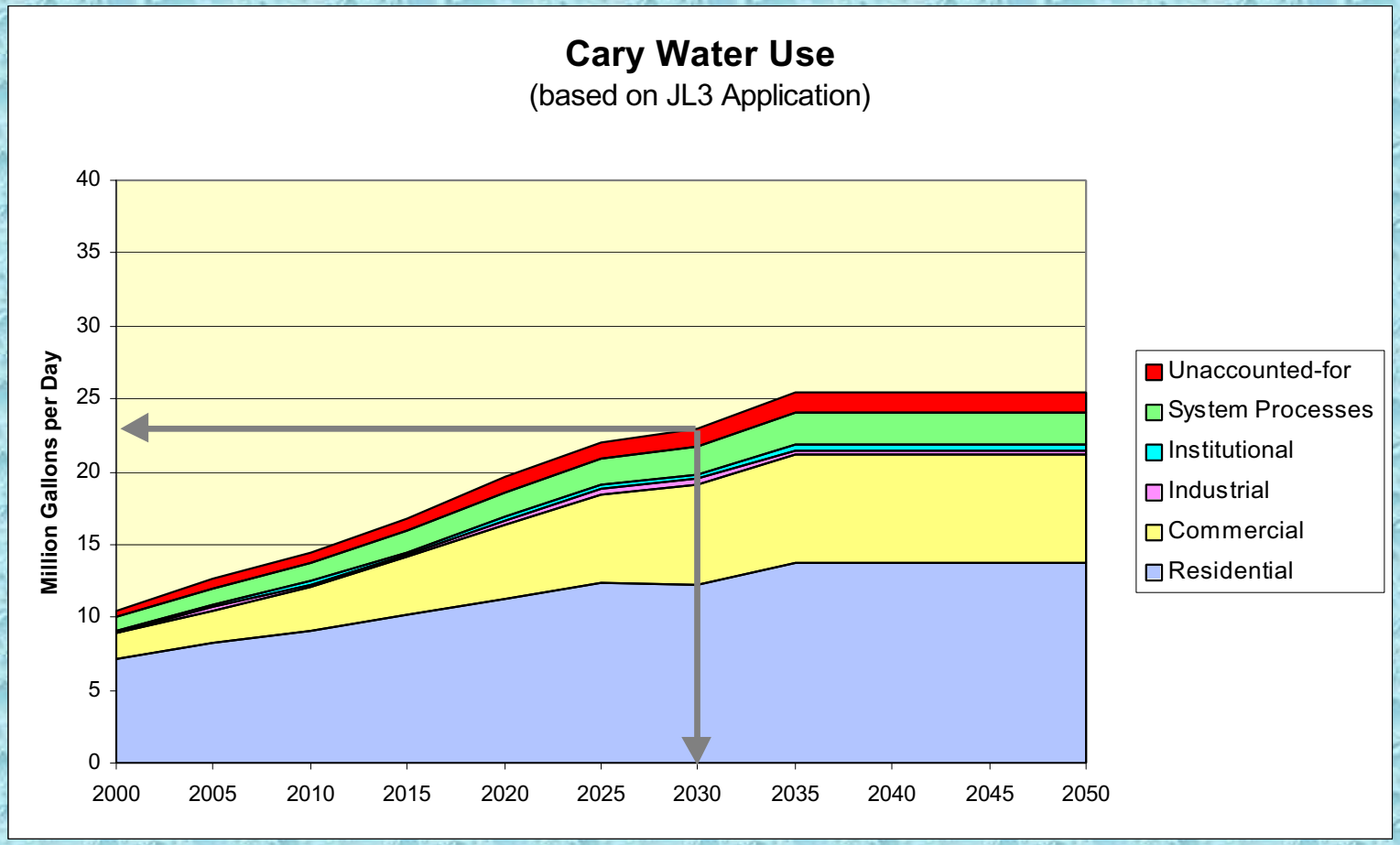
Cary



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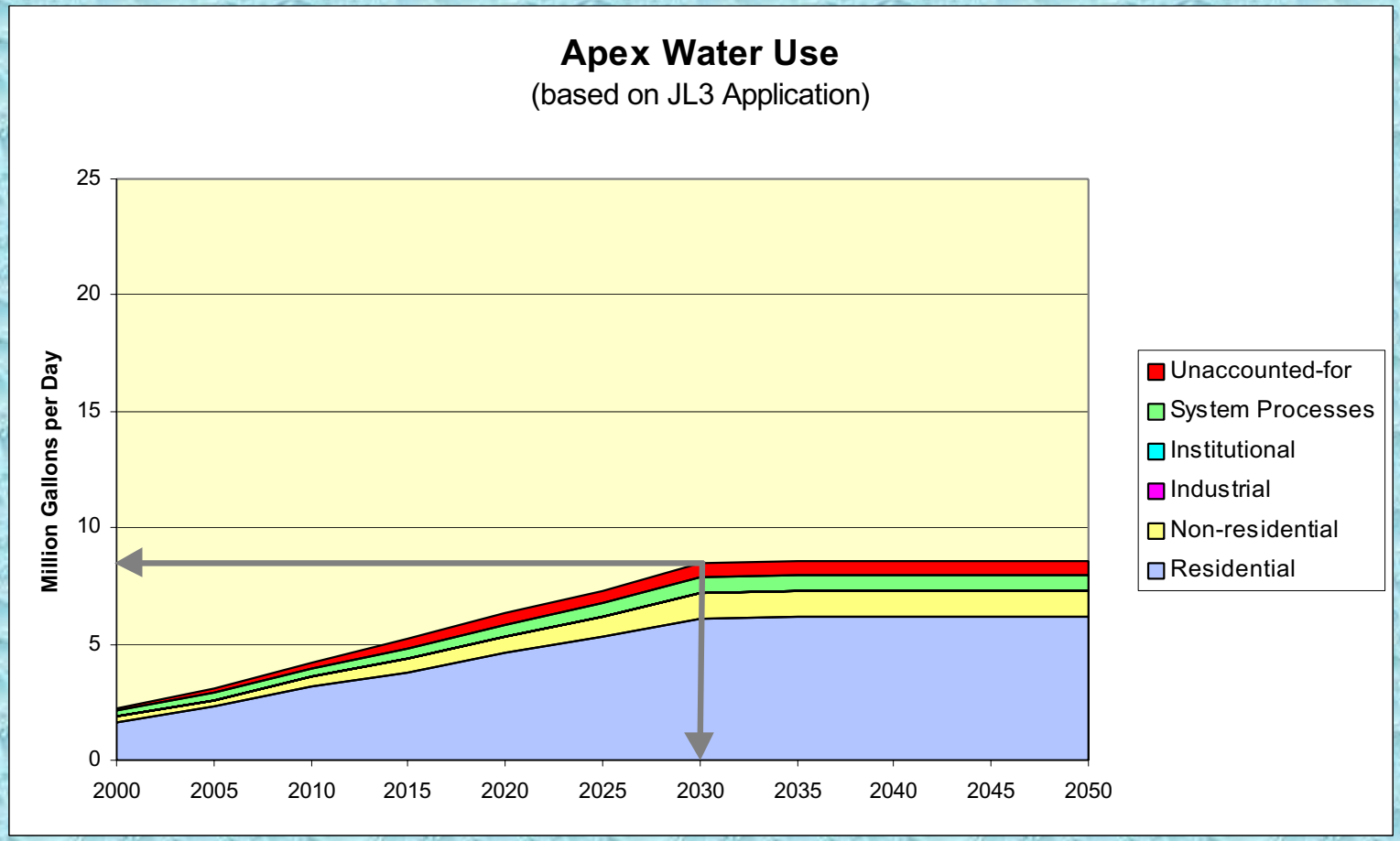
Apex



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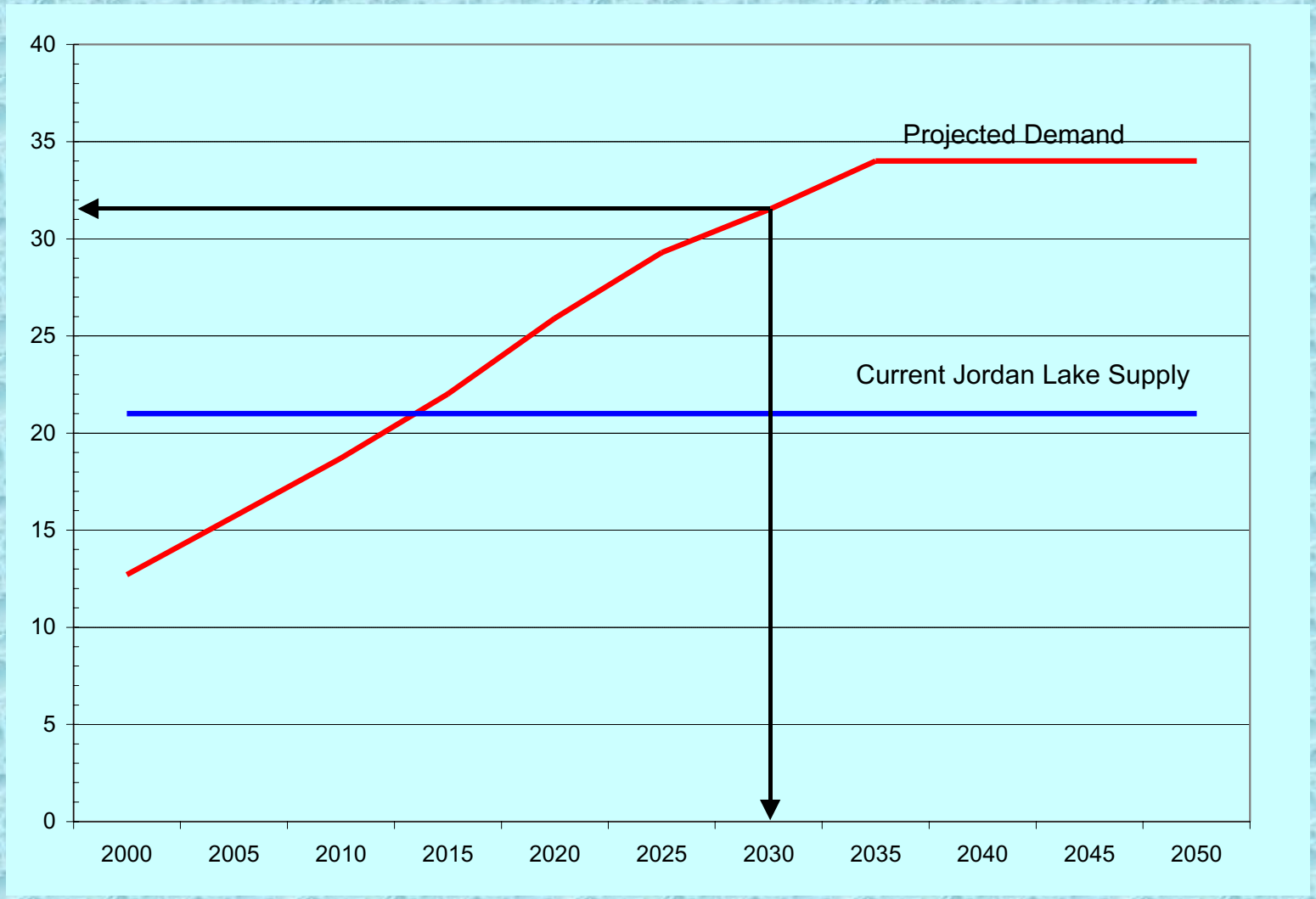
Cary & Apex



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Cary & Apex

- 2030 Total Demand = 31.5 mgd
- Current Supply is Jordan Lake
- Alternative Supplies include
  - Kerr Lake
  - New reservoir on Middle Creek

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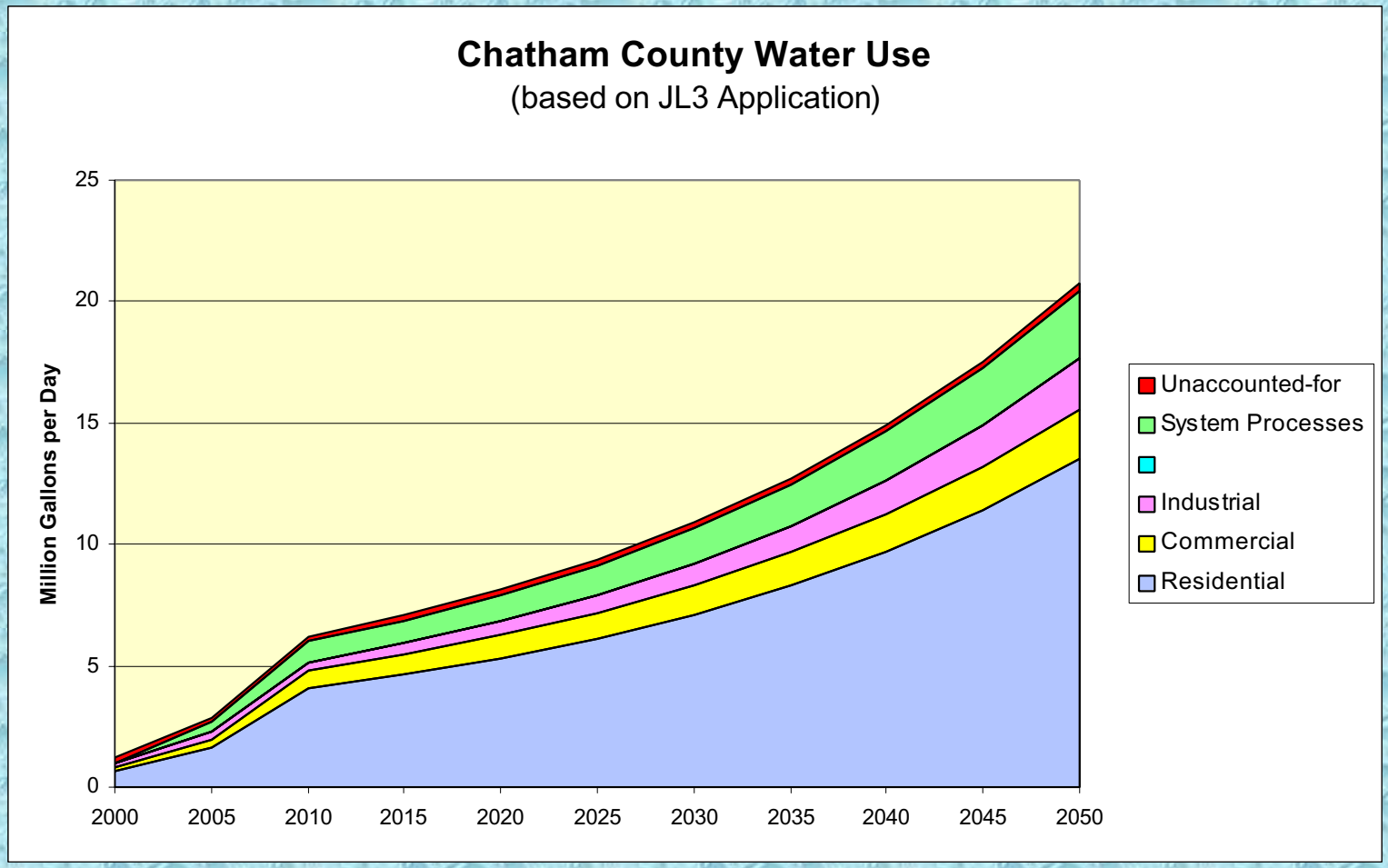
Chatham County



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Chatham County Adjustment

- Current residential use rate = 59 gpcd
- Projected residential use rate =

  199-203 gpcd (247% increase)

- DWR adjusted residential use rate =

  85 gpcd (45% increase)

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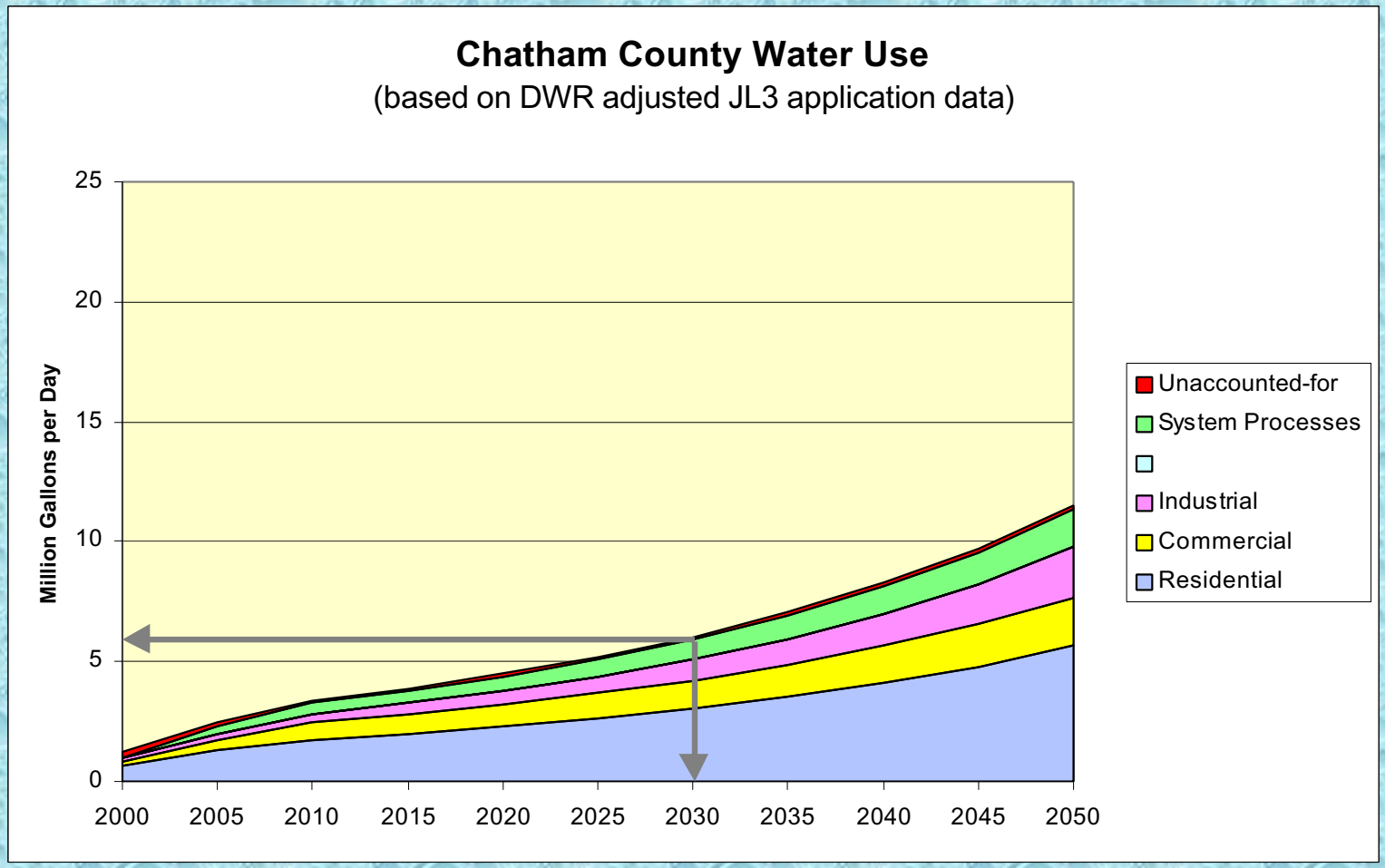
Chatham County



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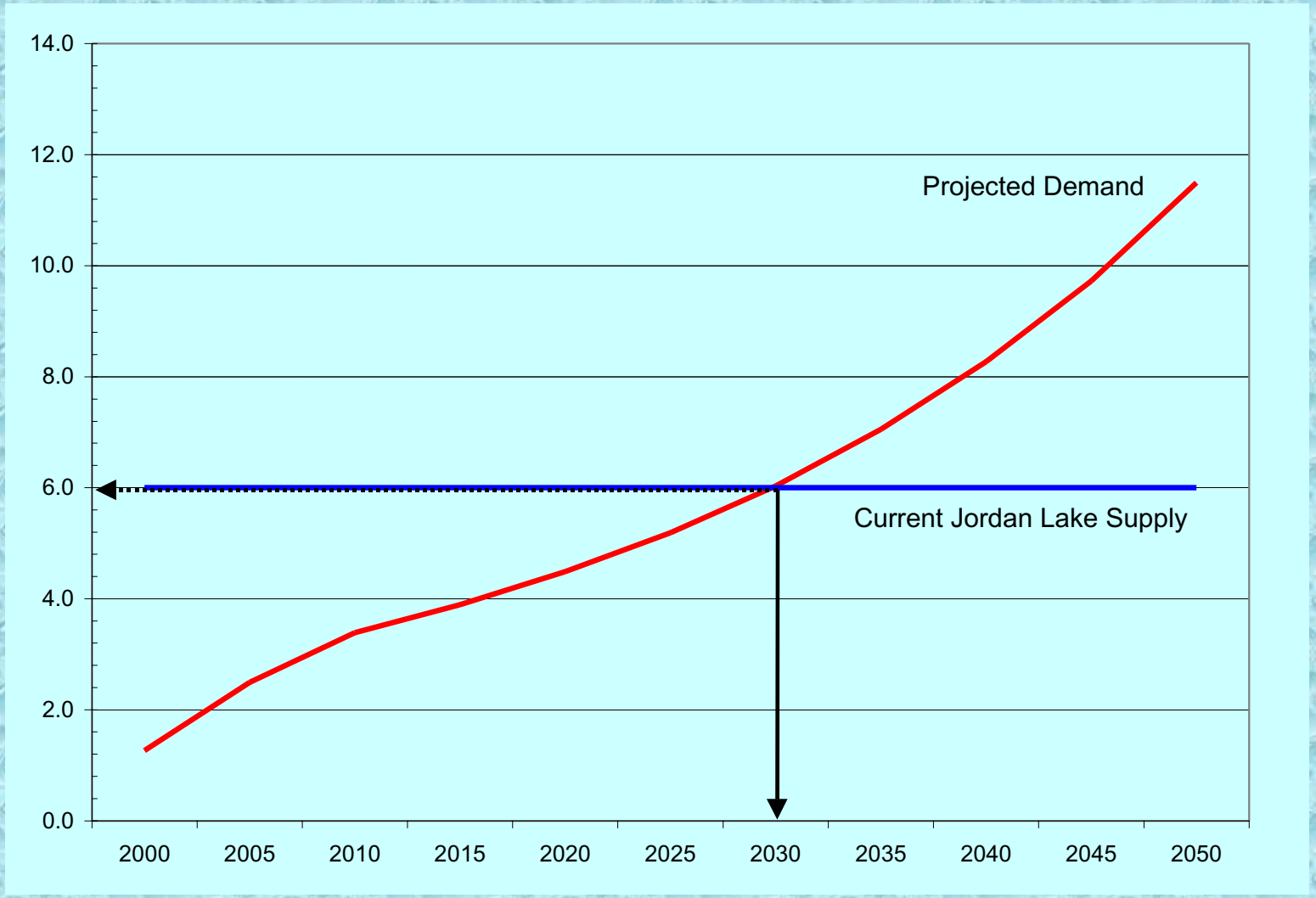
Chatham County



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Chatham County

- 2030 Total Demand = 6.0 mgd
- Current Supply includes Jordan Lake
- Current Supply is adequate, even if the rate of residential use increases by 45%

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Pittsboro & Siler City

- Did not submit applications
- Included some information in the Chatham County application
- Current or anticipated supplies adequate to meet 2030 projected demands

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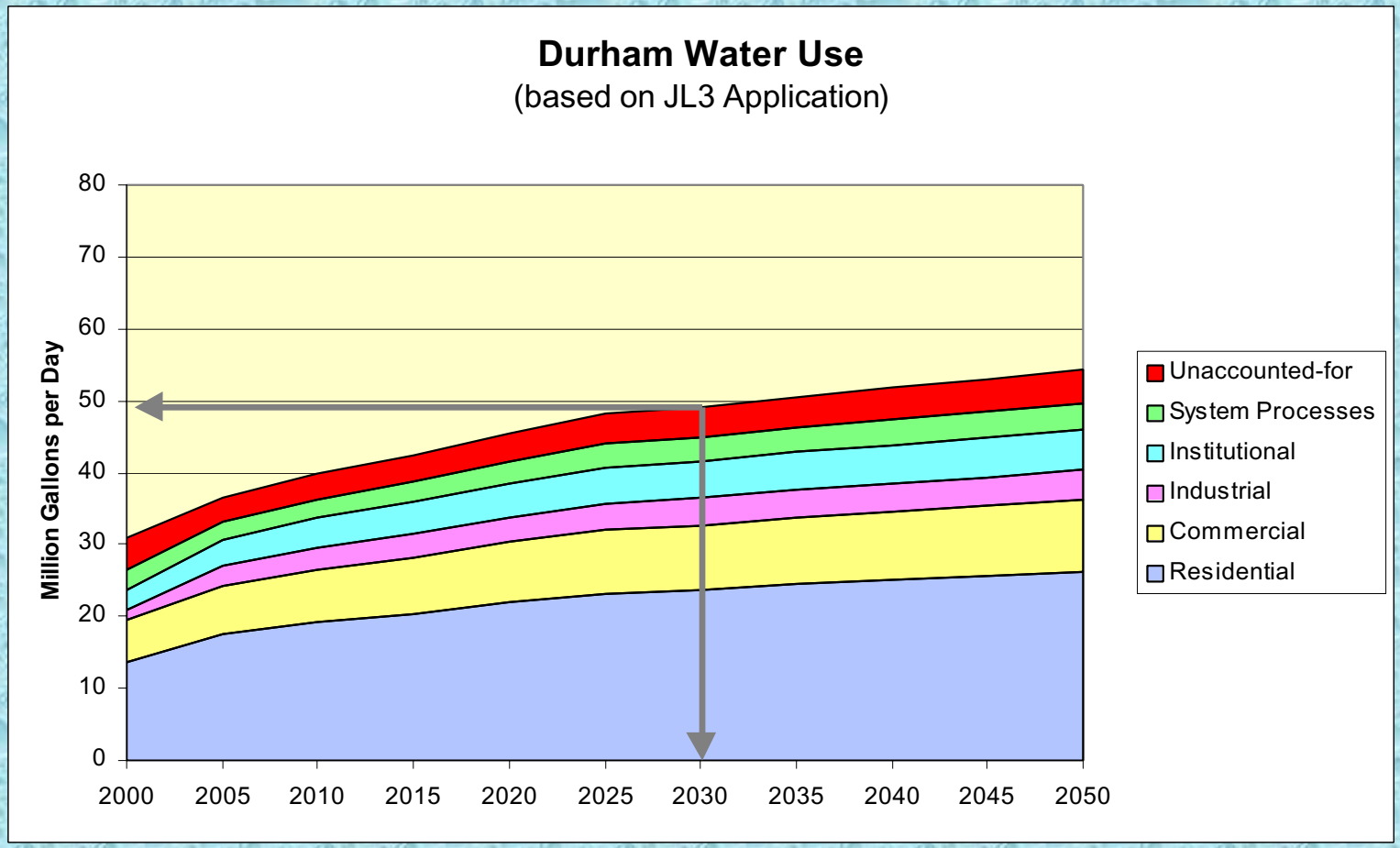
Durham



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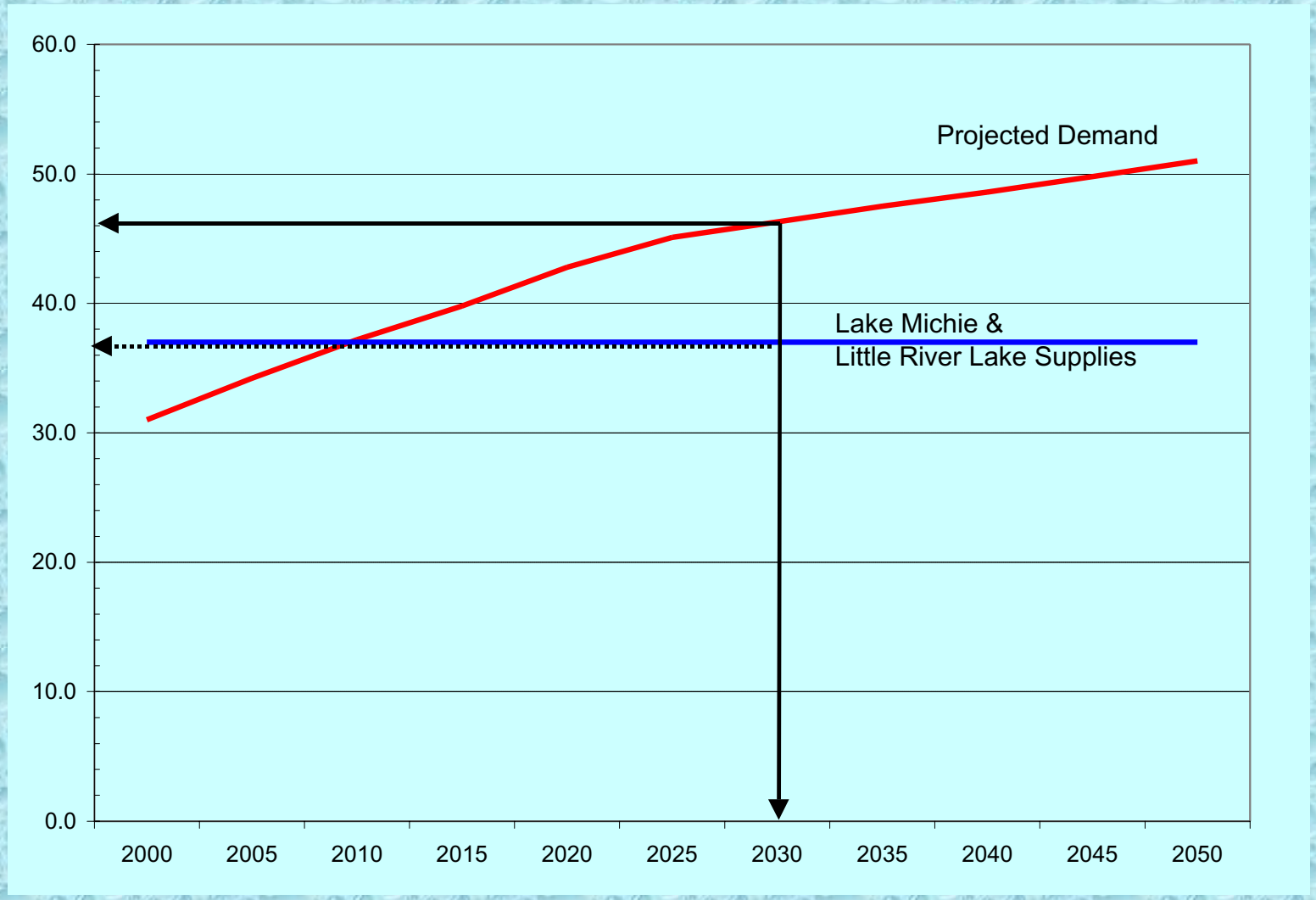
Durham



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Durham

- 2030 Total Demand (w/conservation) = 46.3 mgd
- Current Supplies = 37 mgd
- Alternative Supplies include
  - Expand Lake Michie
  - Kerr Lake
  - New reservoir on Flat River

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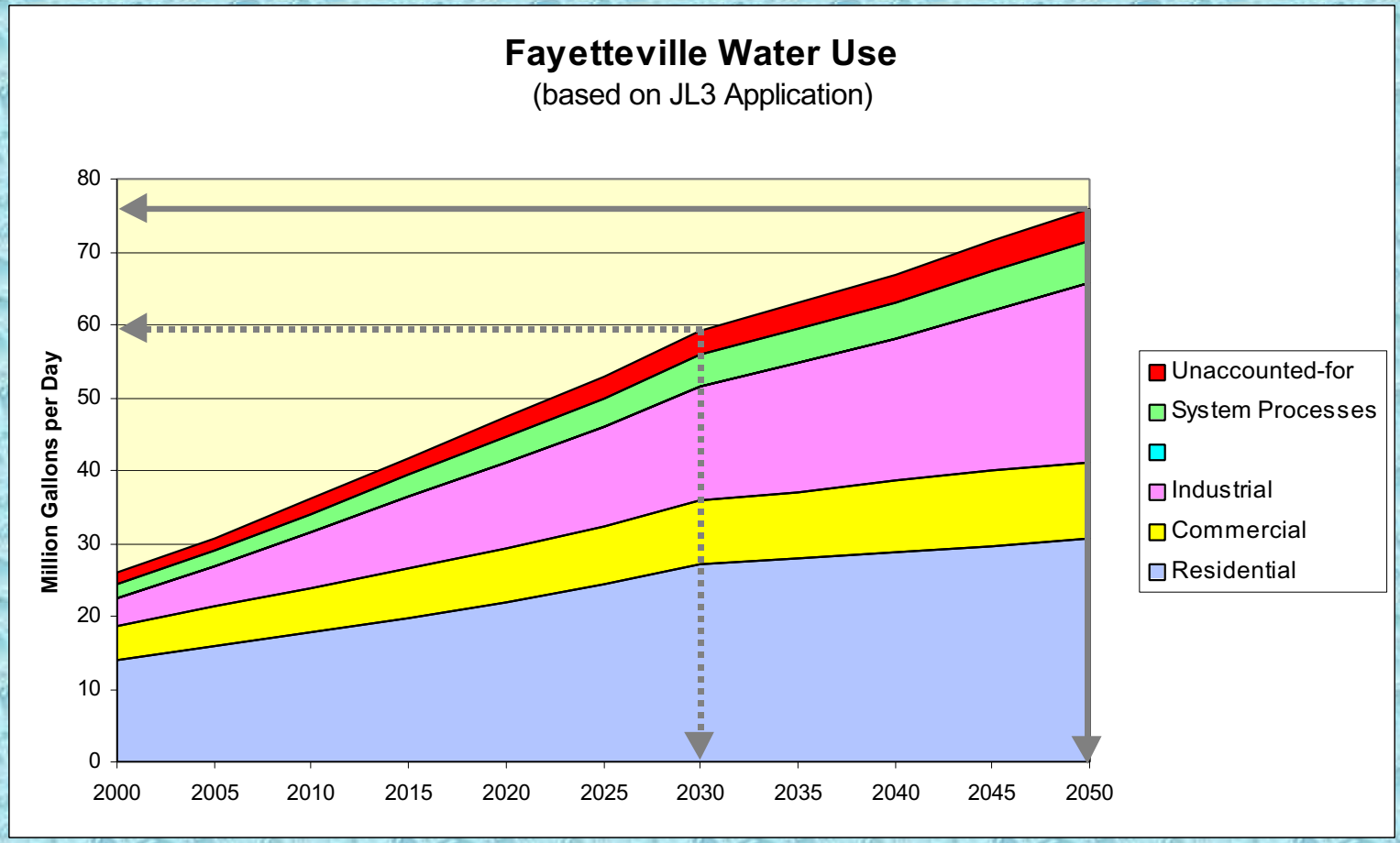
Fayetteville



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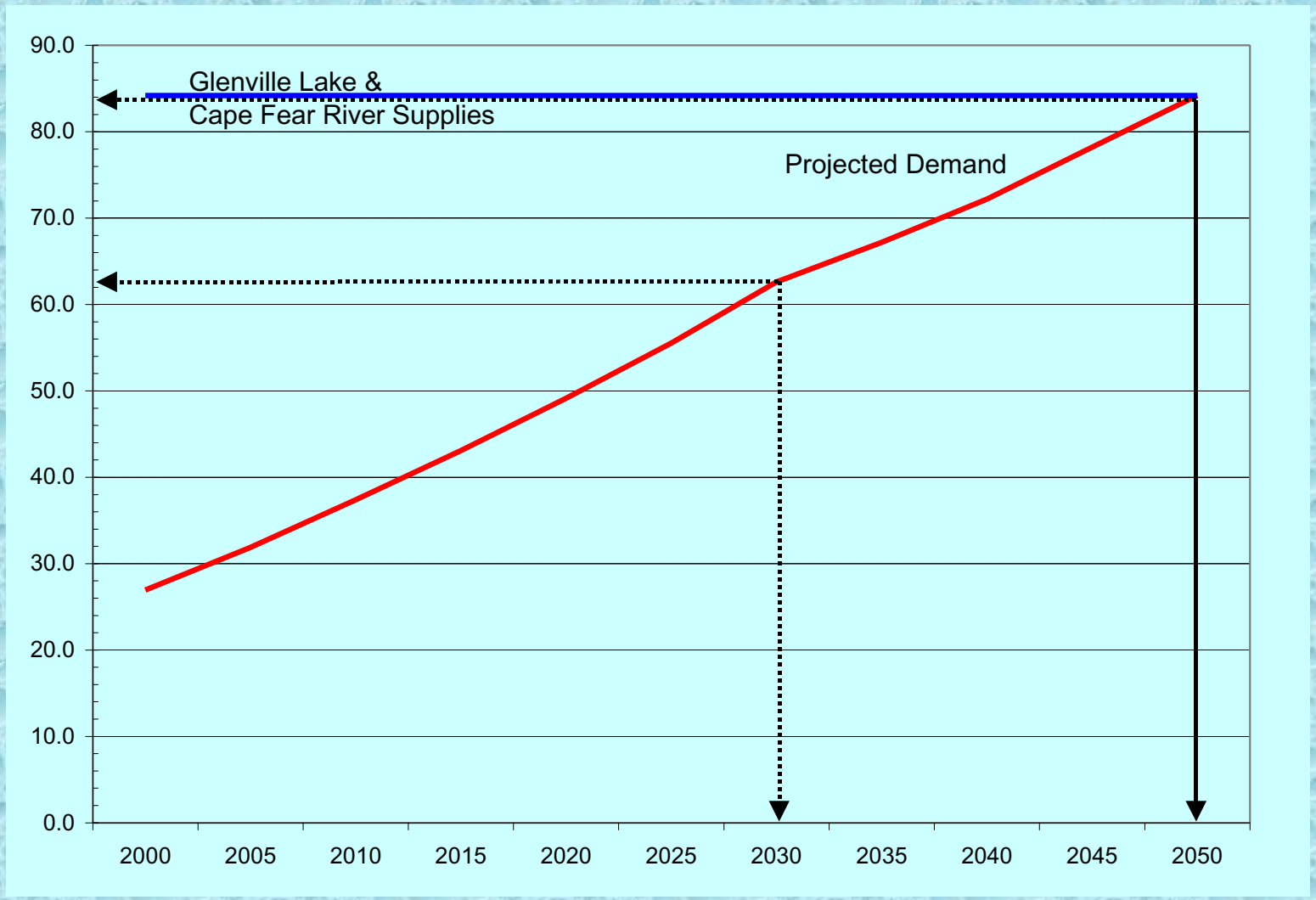
Fayetteville



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Fayetteville

- 2050 Total Demand = 84.2 mgd
- Current Supplies include Glenville Lake
  = 5.0 mgd
- Modeled Cape Fear River Demand
  = 79.2 mgd (60.7-96.2 mgd)
- Current Supply is Adequate through 2050, at a minimum

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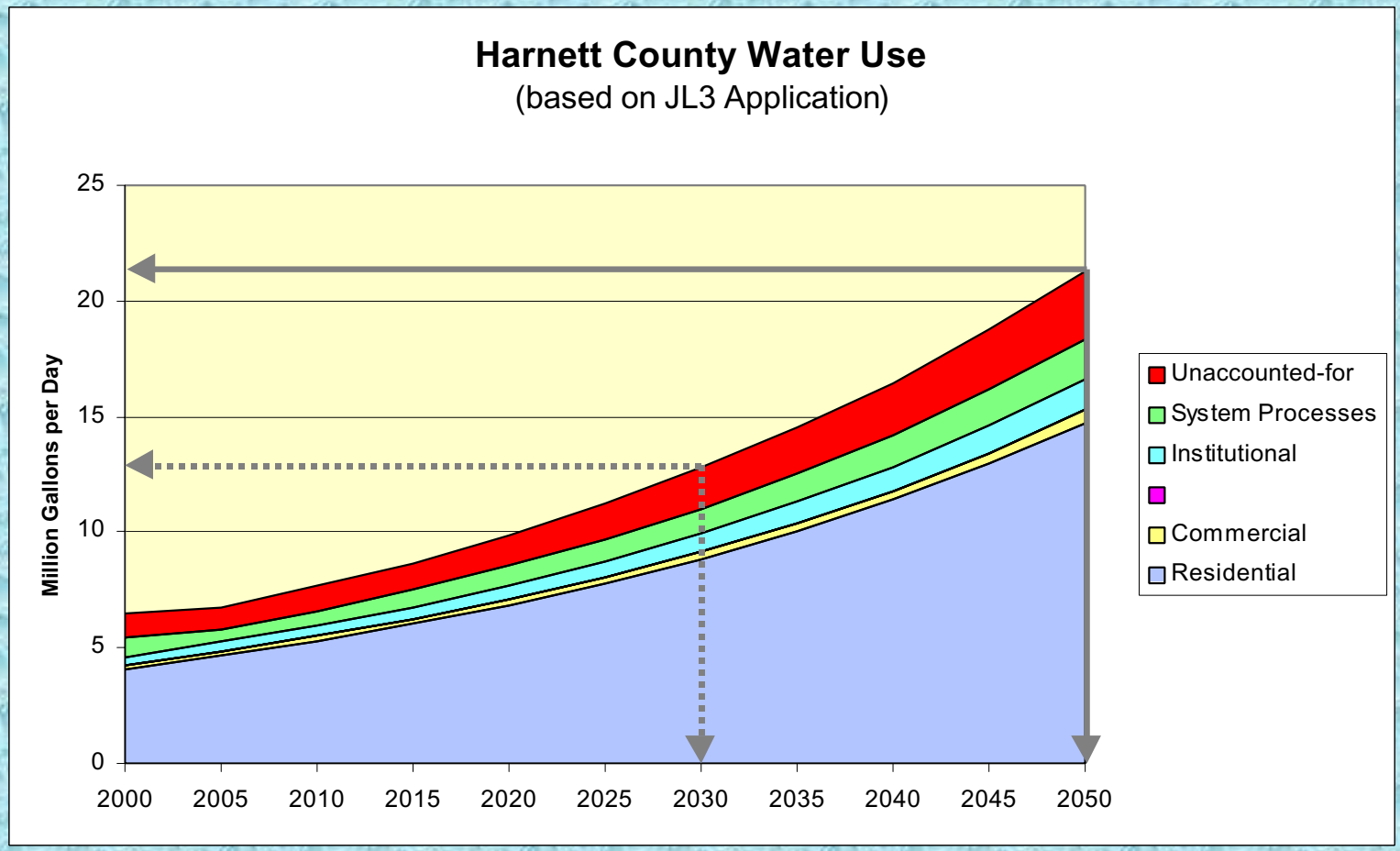
Harnett County



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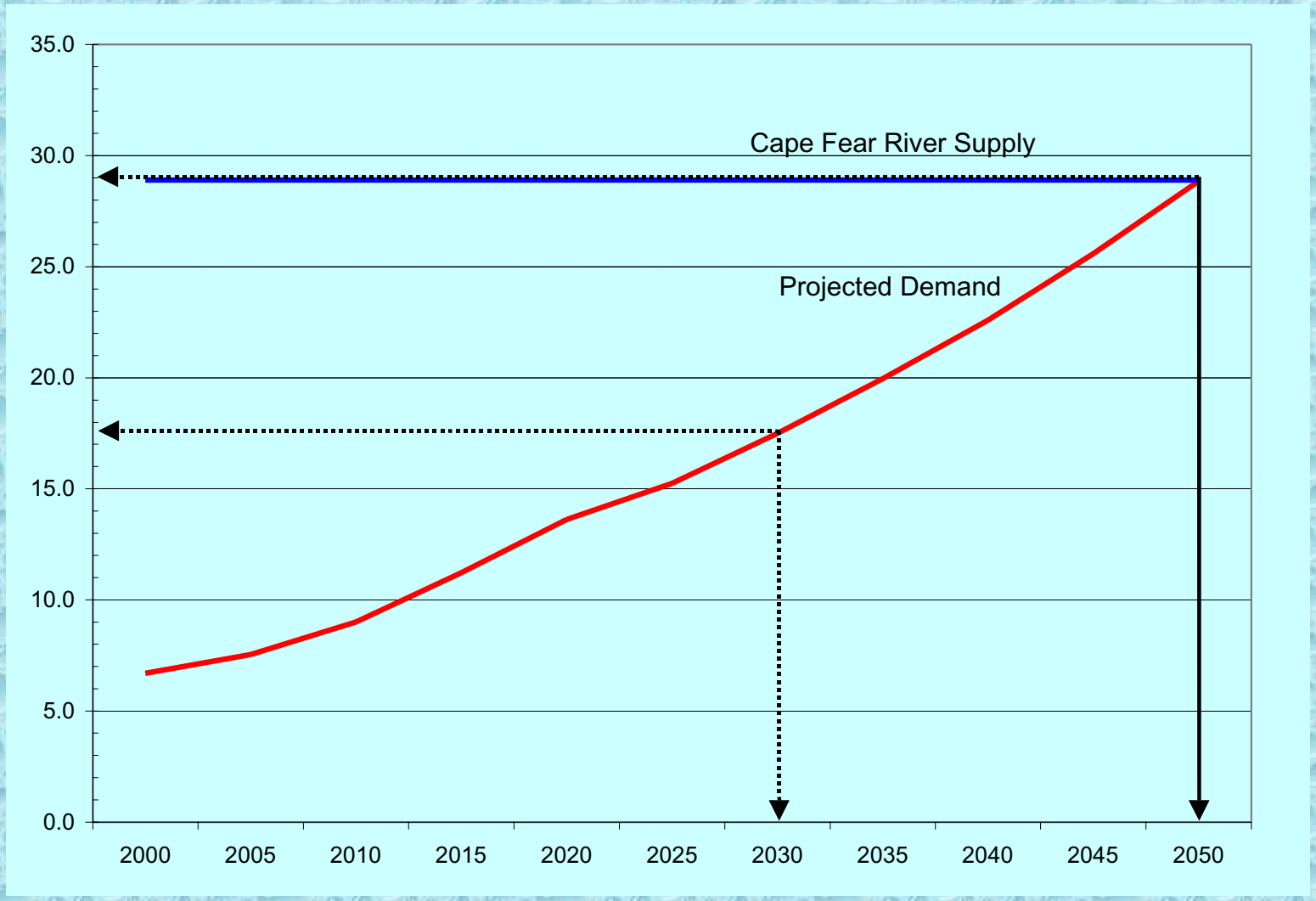
Harnett County



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Harnett County

- 2050 Total Demand = 28.9 mgd
- Modeled Cape Fear River Demand
  = 28.9 mgd (22.2-39.3 mgd)
- Current Supply is Adequate through 2050, at a minimum

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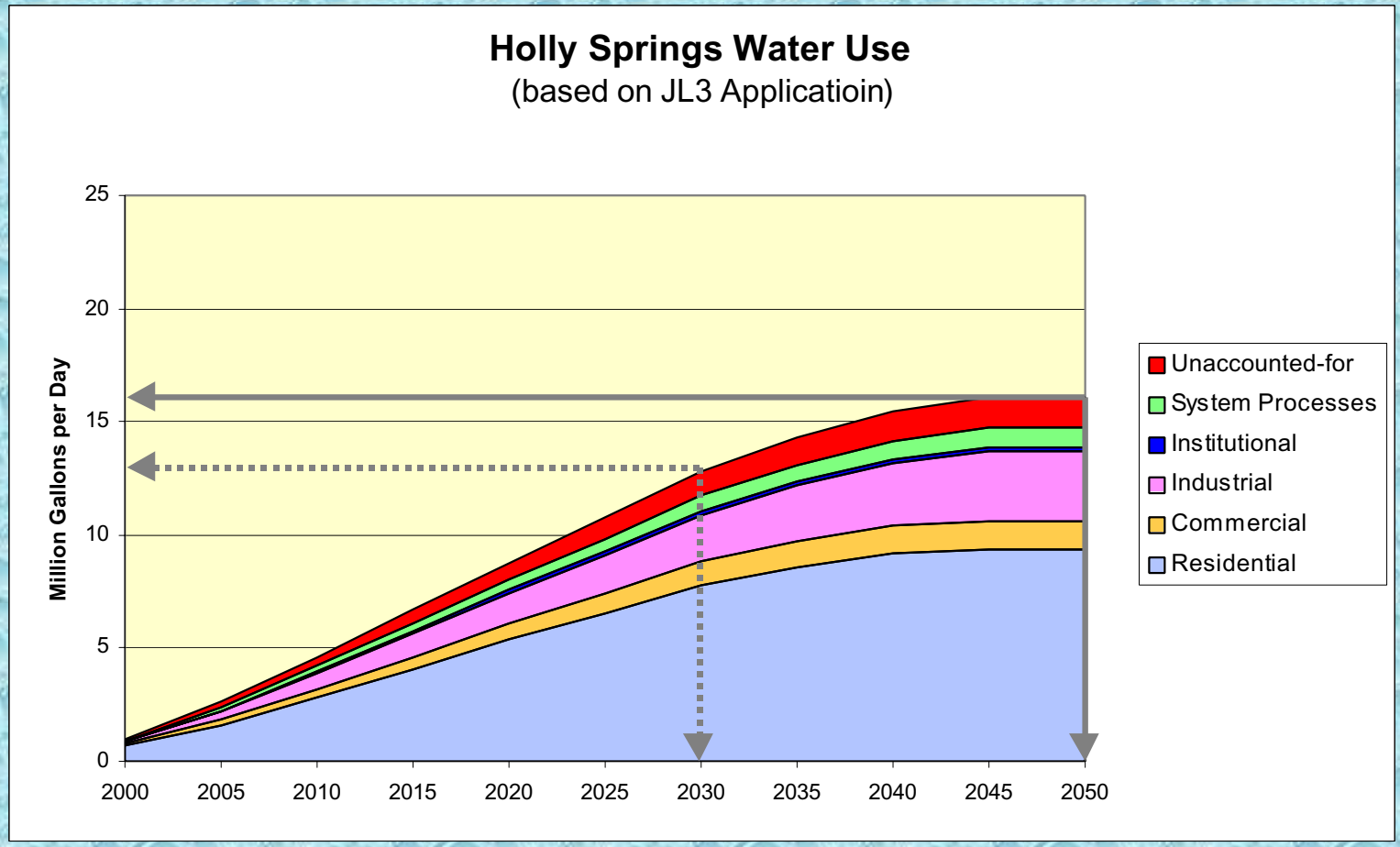
Holly Springs



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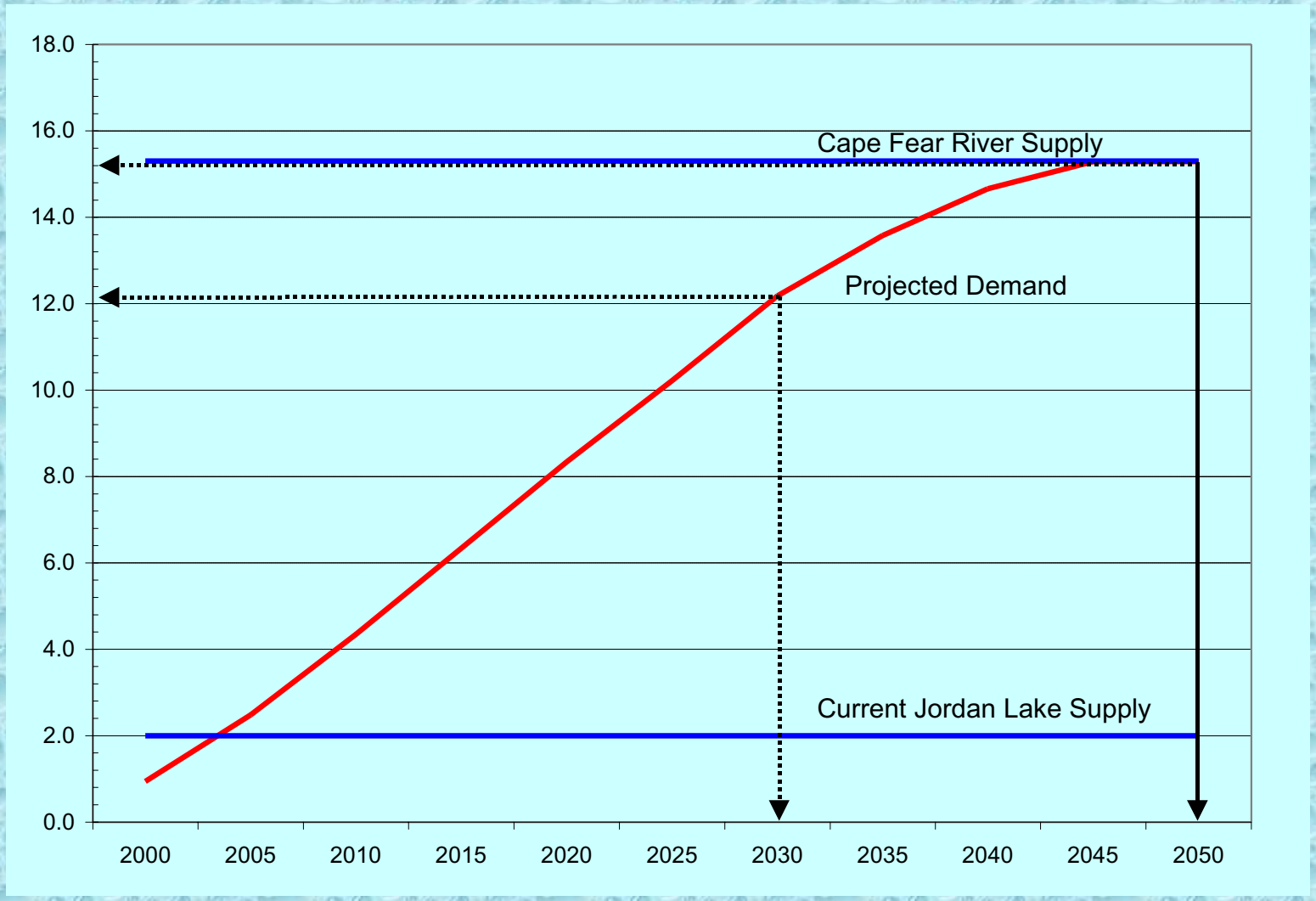
Holly Springs



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Holly Springs

- 2050 Total Demand = 15.3 mgd
- Modeled Cape Fear River Demand
  = 15.3 mgd (8.8-21.3 mgd)
- Current Supply is Adequate through 2050, at a minimum

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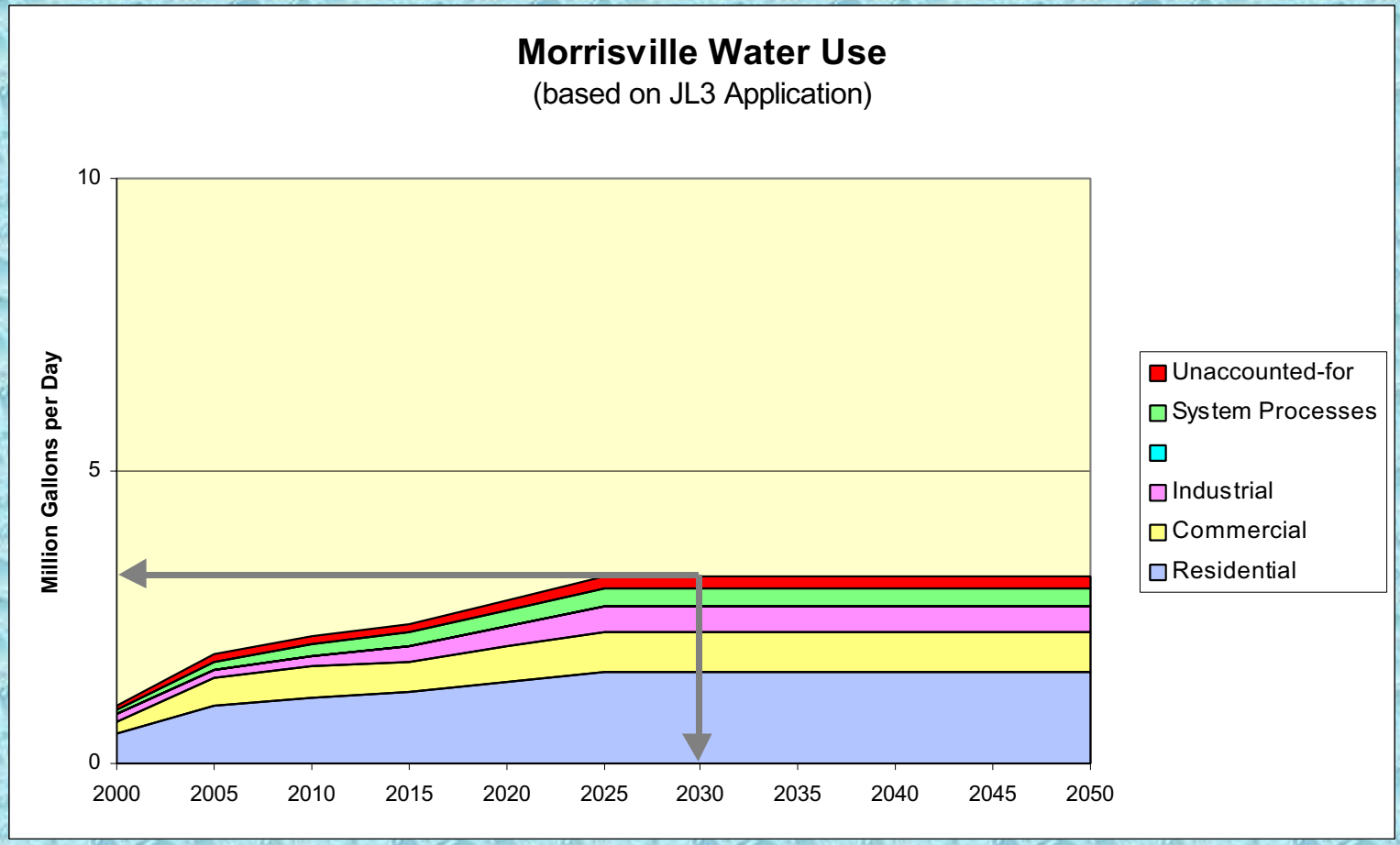
Morrisville



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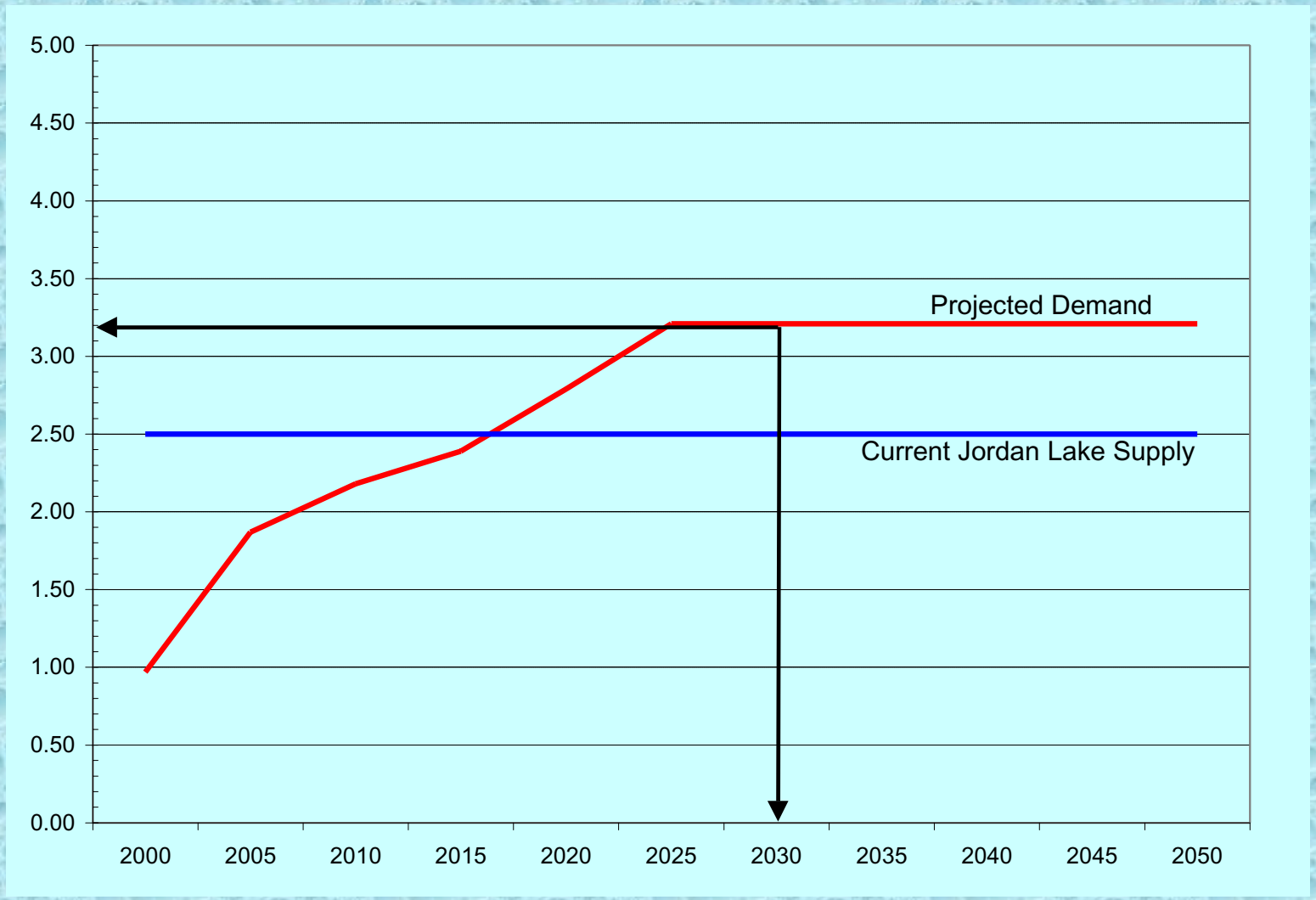
Morrisville



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Morrisville

- 2030 Total Demand = 3.2 mgd
- Current Supply is Jordan Lake
- Alternative Supplies include
  - Kerr Lake
  - New reservoir on Middle Creek

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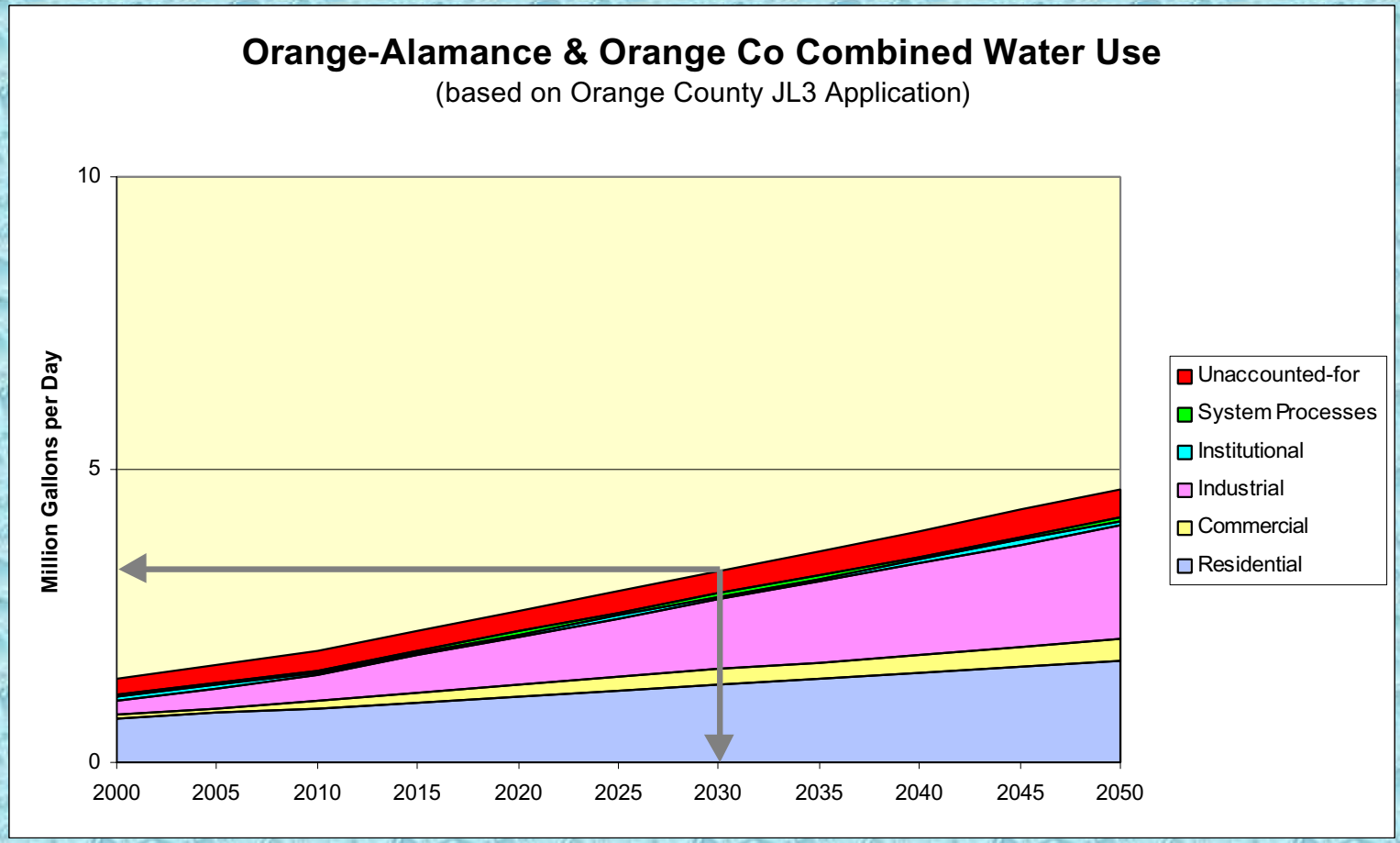
Orange County



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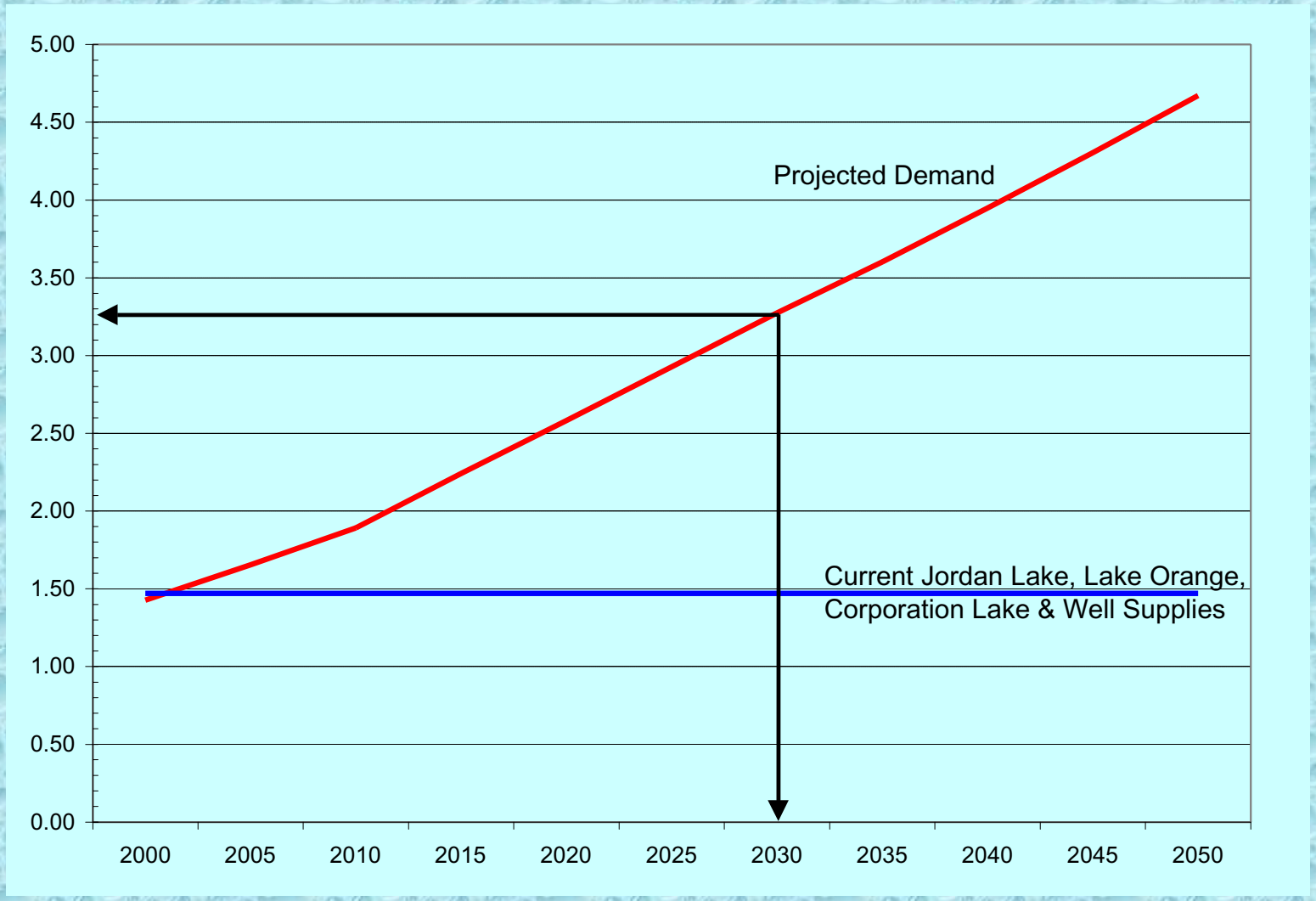
Orange County (& Orange-Alamance)



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Orange County

- Assumes collaboration with Orange-Alamance system
- 2030 Total Demand = 3.3 mgd

- Current Supply includes Jordan Lake

- Did not request an increased allocation

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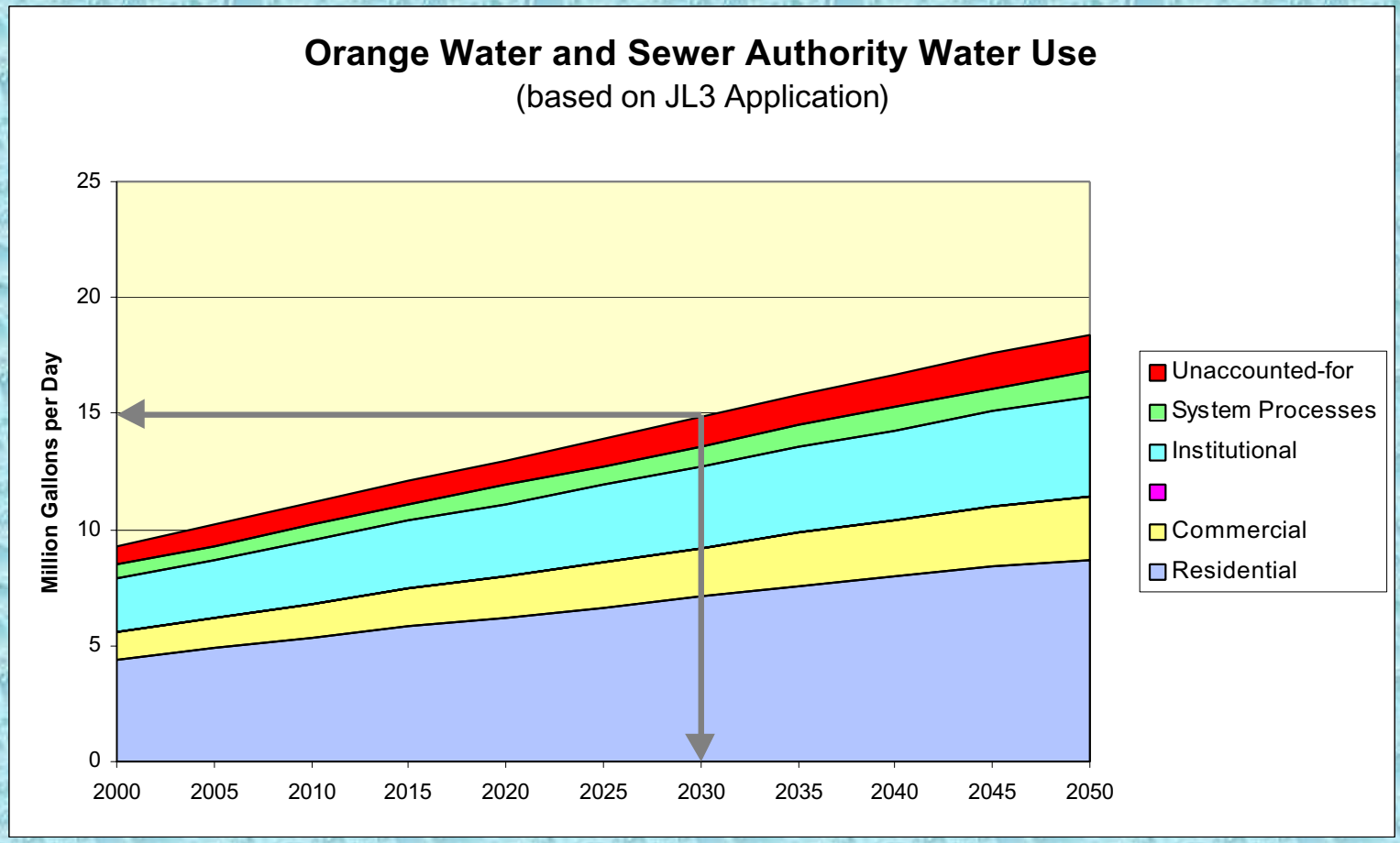
OWASA



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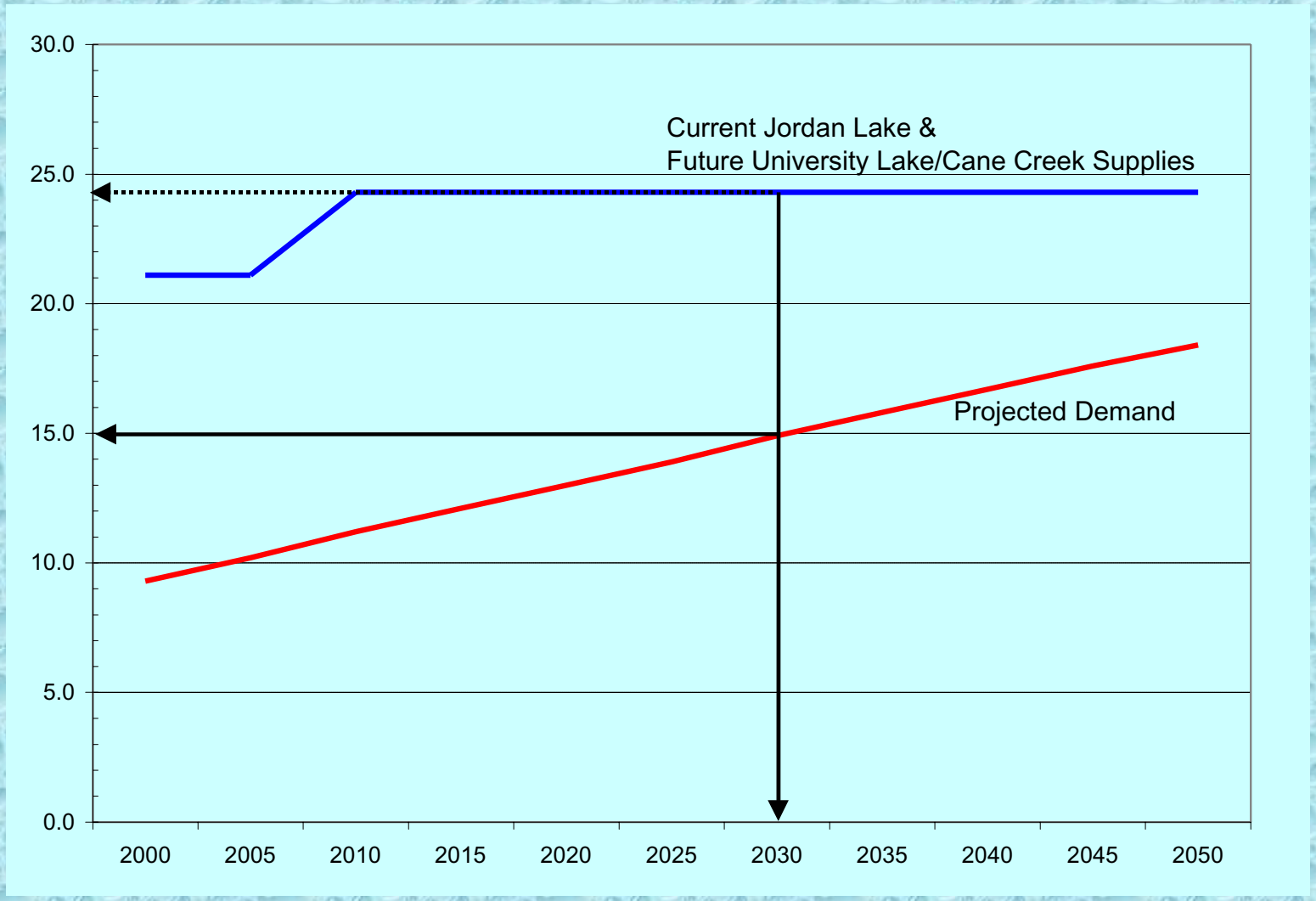
OWASA



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OWASA

- 2030 Total Demand = 14.9 mgd
- 2030 Supplies = 24.3 mgd
- Current Supply includes Jordan Lake
- Requested reduction in Jordan Lake allocation

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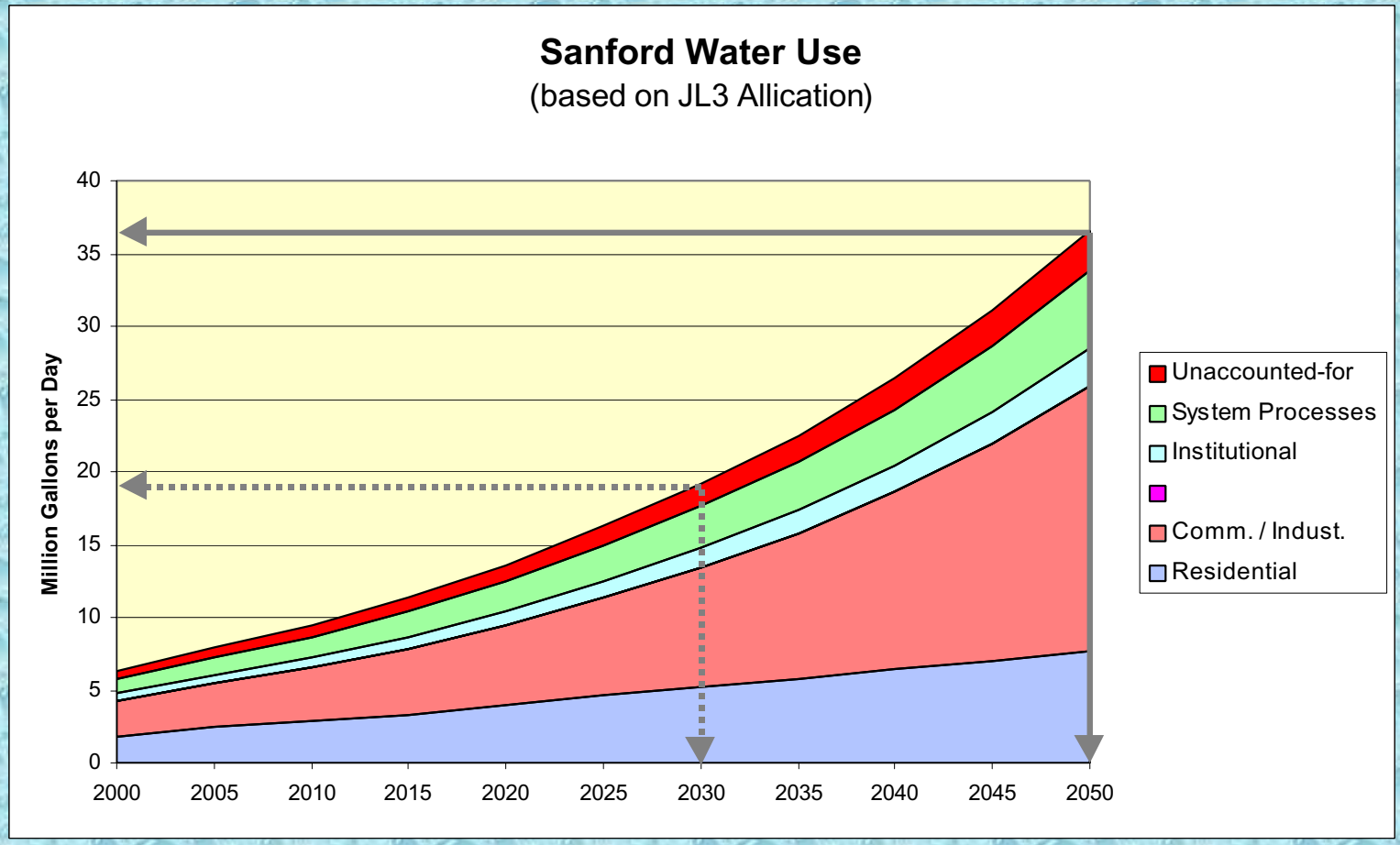
Sanf



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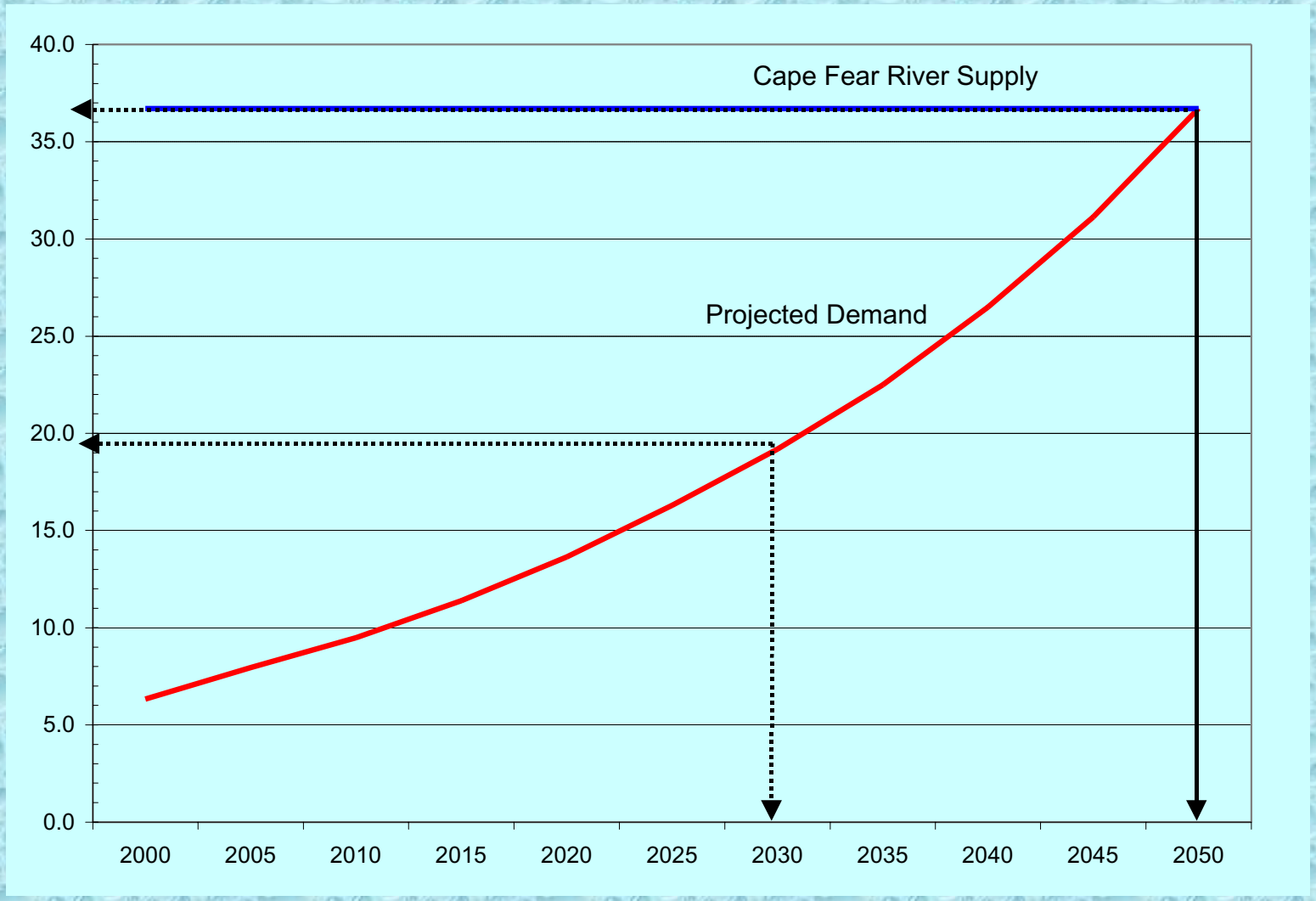
Sanf



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Sanf

- 2050 Total Demand = 36.7 mgd
- Modeled Cape Fear River Demand
  = 36.7 mgd (31.1-42.8 mgd)
- Current Supply is Adequate through 2050, at a minimum

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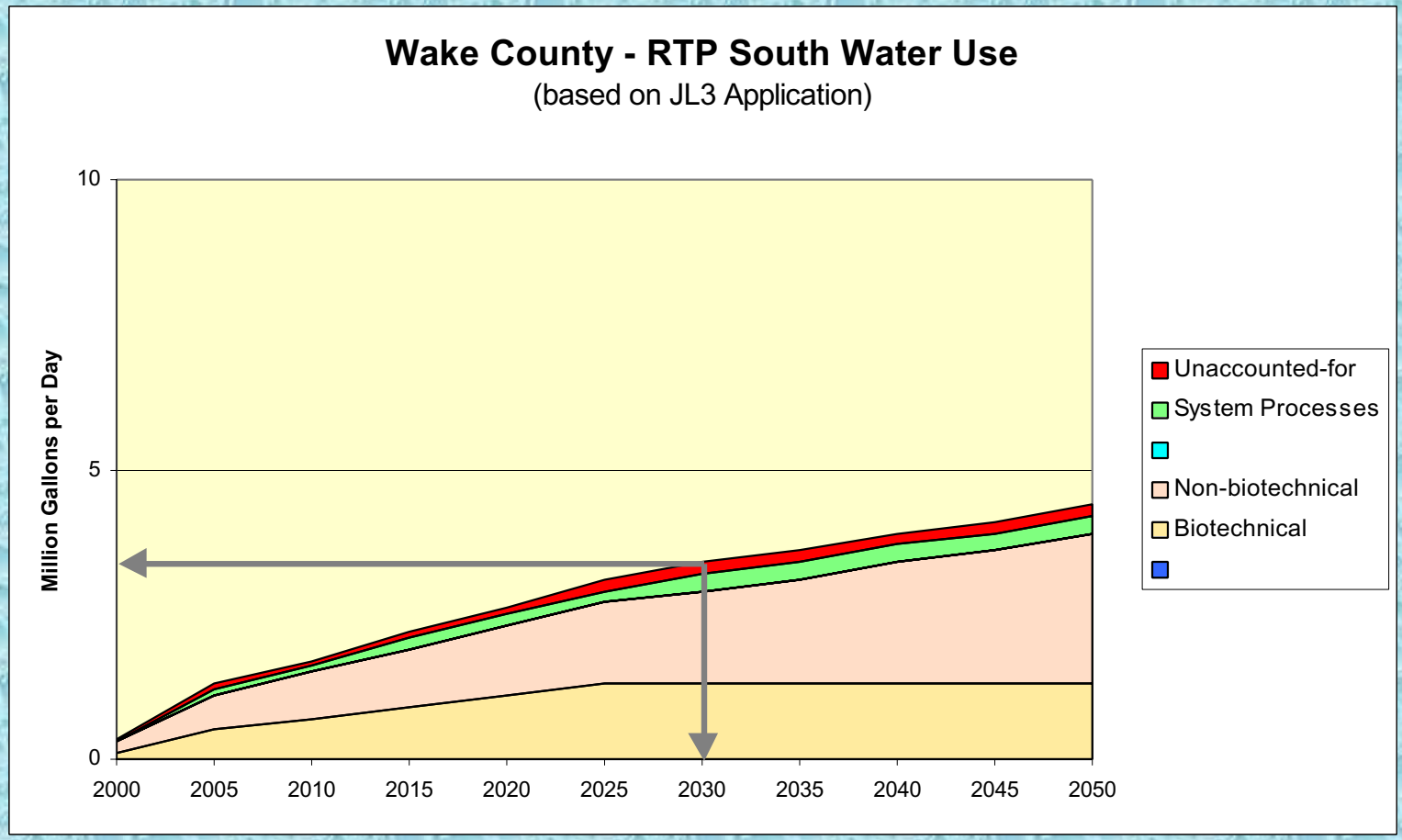
Wake County - RTP



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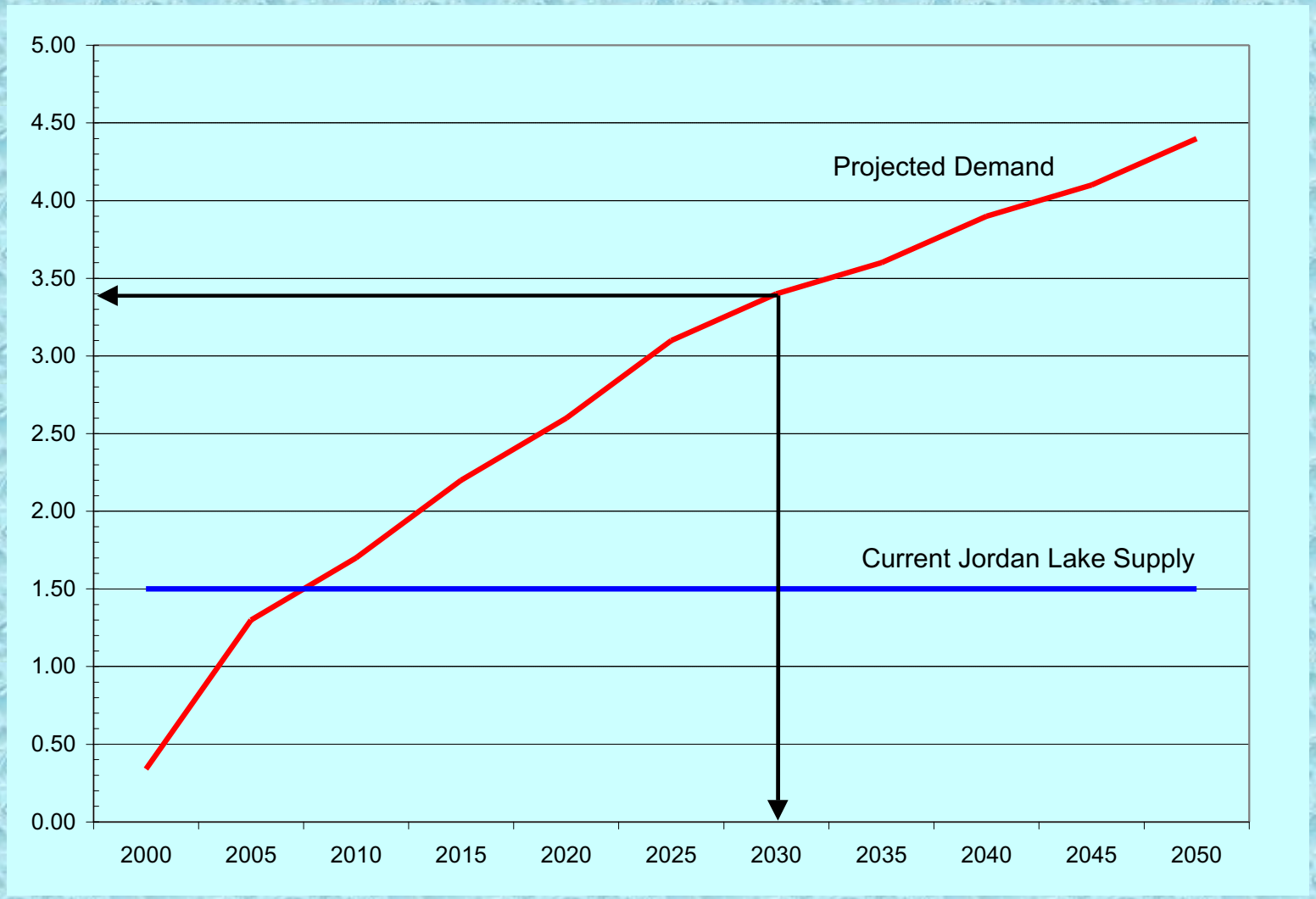
Wake County - RTP



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Wake County - RTP

- 2030 Total Demand = 3.4 mgd
- Current Supply is Jordan Lake
- Alternative Supplies include
  - Kerr Lake
  - New reservoir on Middle Creek

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DWR Recommendations

	Total (mgd)	Watershed Diversion (mgd)
Towns of Cary & Apex	**32.0**	**31.3**
Chatham County	**6.0**	**1.3**
City of Durham	**10.0**	**0.0**
City of Fayetteville	**0.0**	**0.0**
Harnett County	**0.0**	**0.0**
Town of Holly Springs	**0.0**	**0.0**
Town of Morrisville	**3.5**	**2.9**
Orange County	**1.0**	**1.0**
Orange Water & Sewer Authority	**5.0**	**0.0**
City of Sanford	**0.0**	**0.0**
Wake County - RTP	**3.5**	**3.5**
Total	**61.0**	**40.0**

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What are the impacts?

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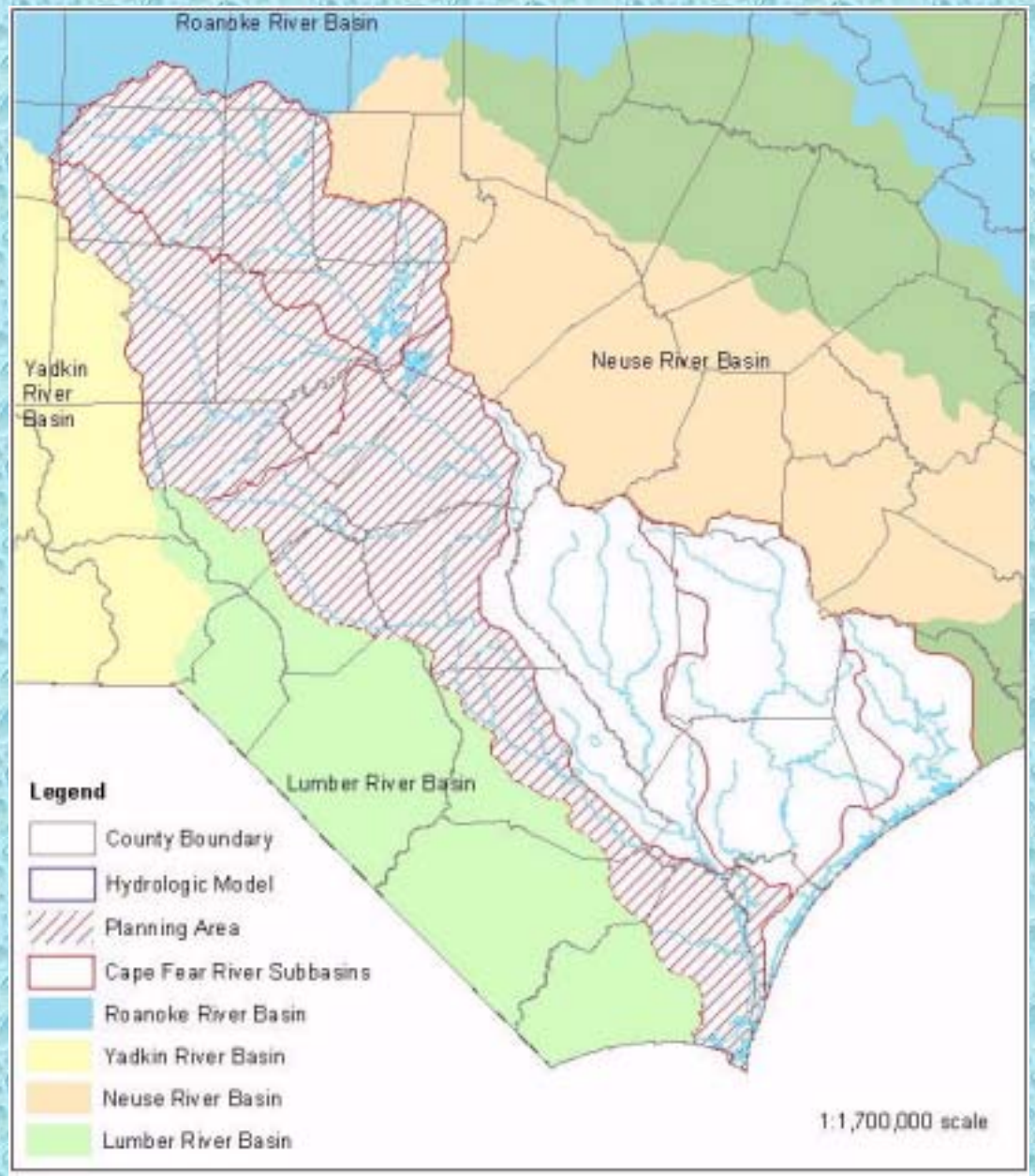
Cape Fear River Basin Water Supply Plan



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Cape Fear River Basin Water Supply Plan

- Demand projections through 2050
- 94 local water supply systems
- All water supply systems withdrawing more than 100,000 gpd from the Basin
- All water systems discharging more than 100,000 gpd to the Basin

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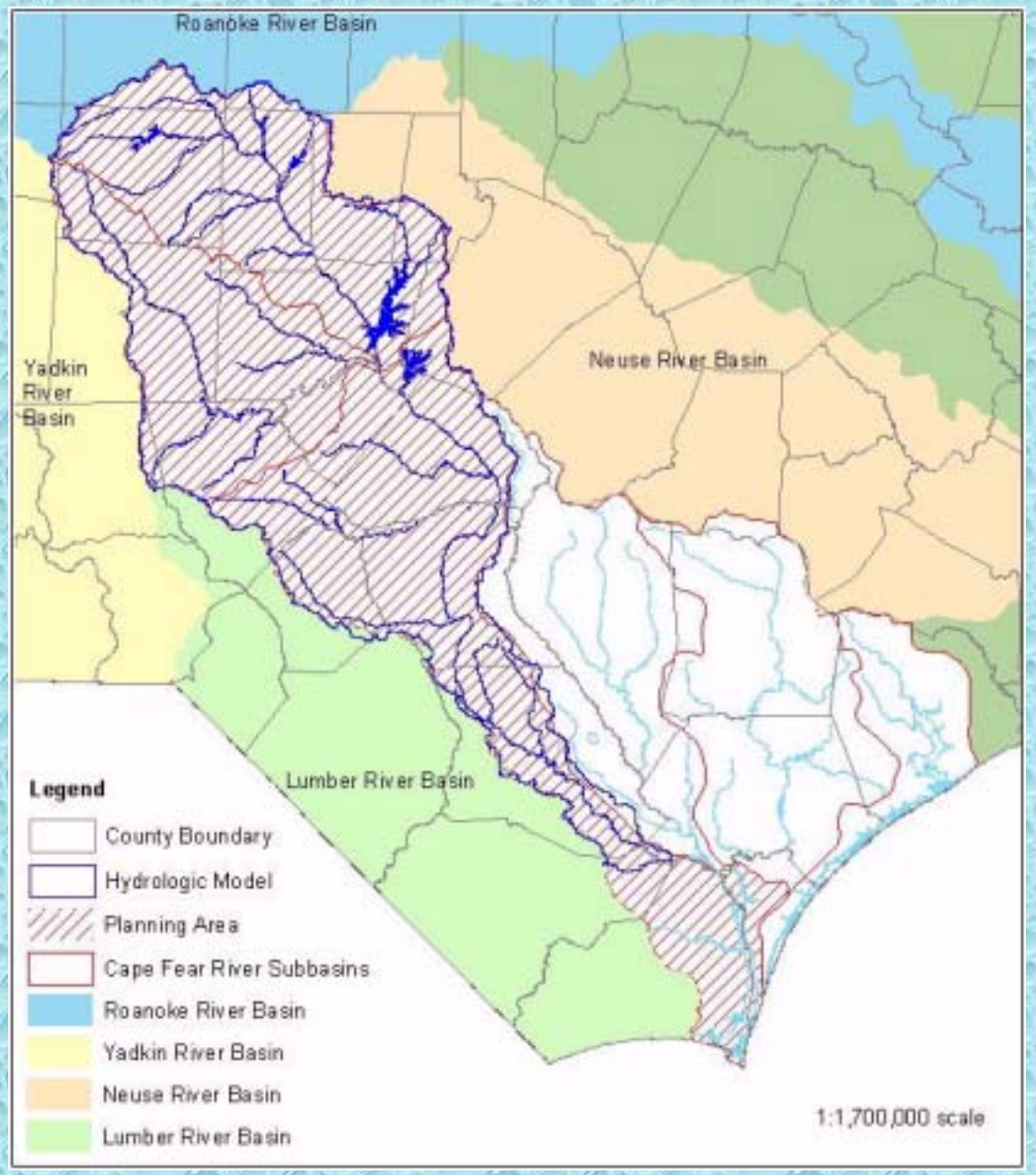
Cape Fear River Basin Hydro-logic Model



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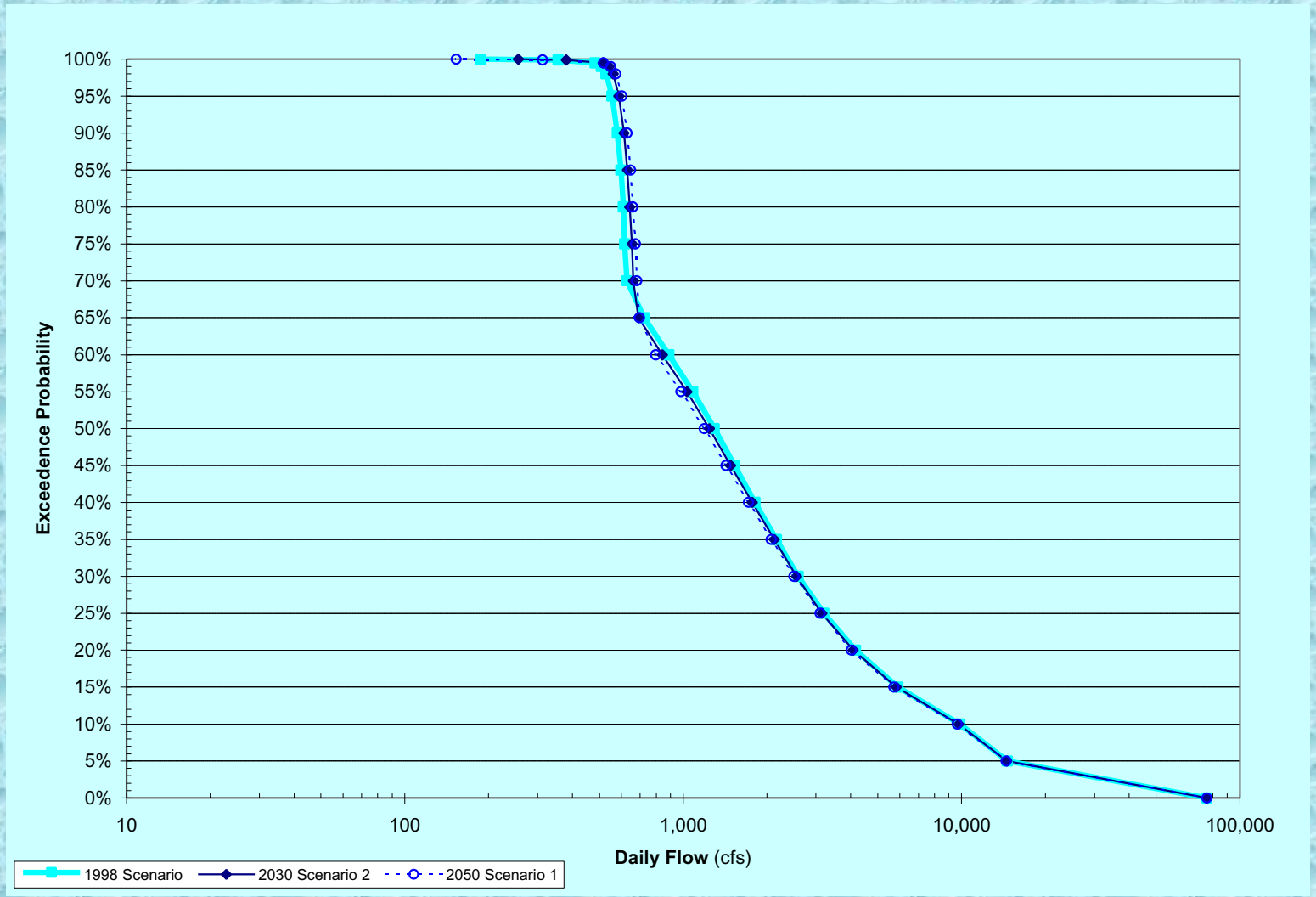
Flows at Buckhorn Dam



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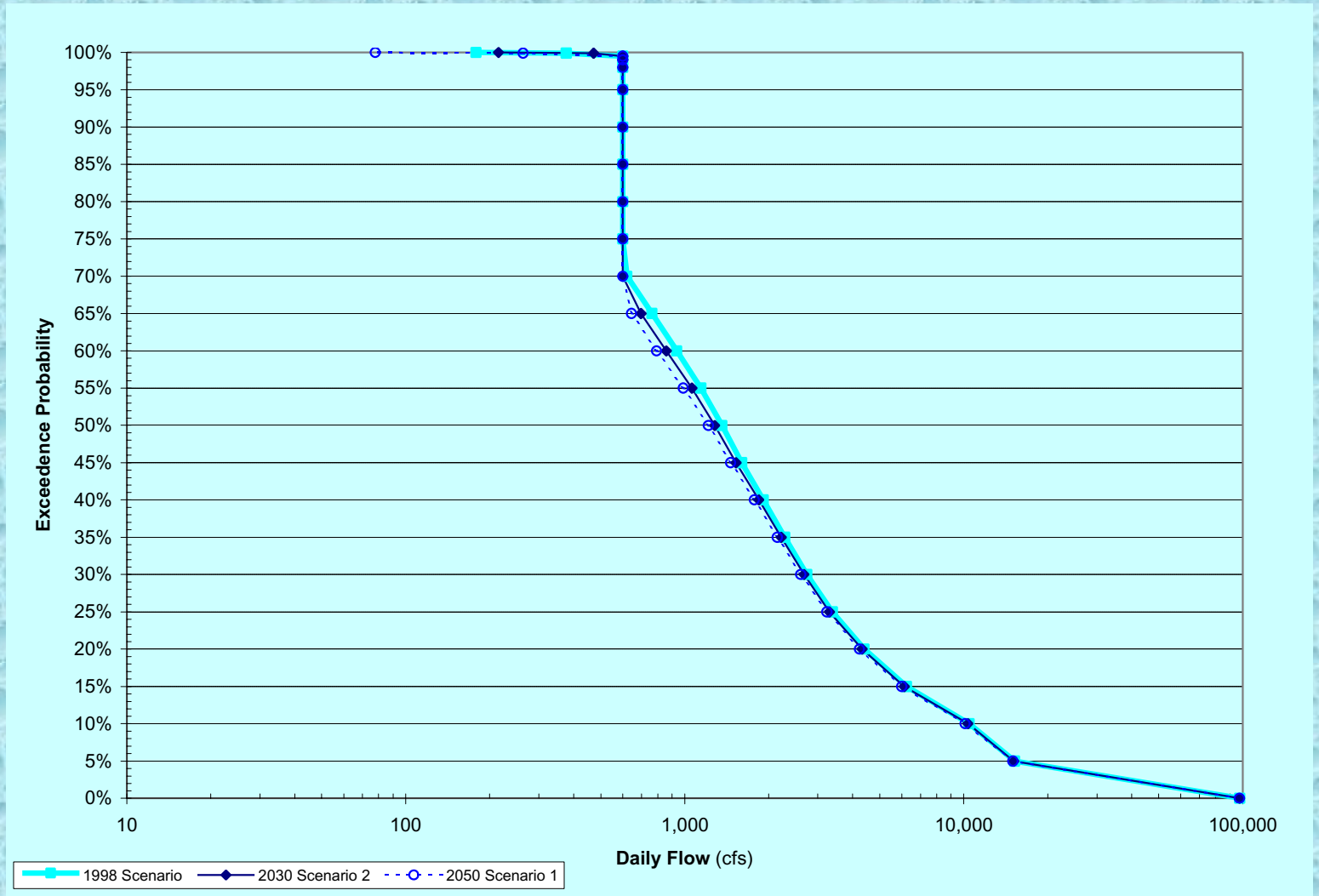
Flows at Lillington



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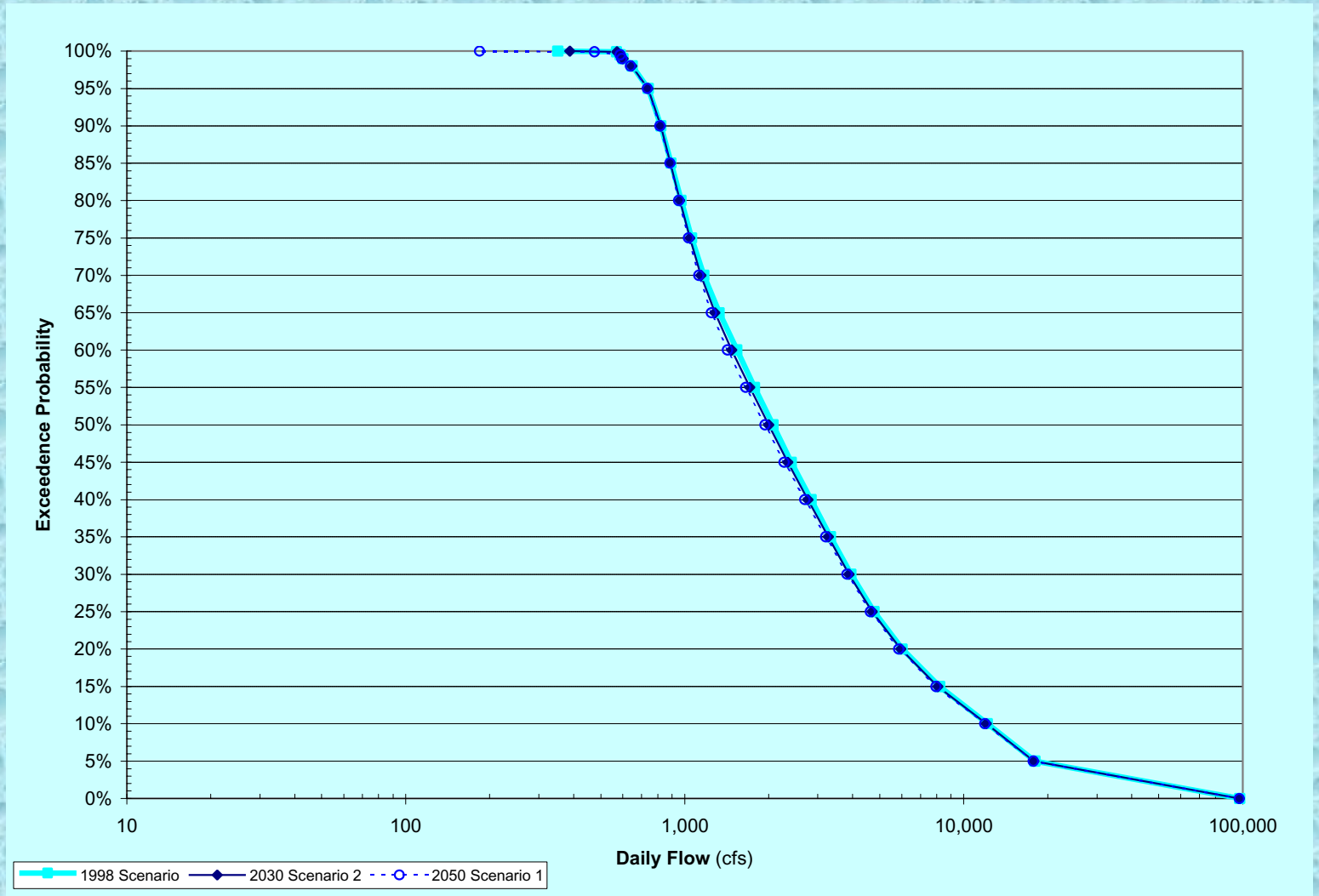
Flows at Fayetteville



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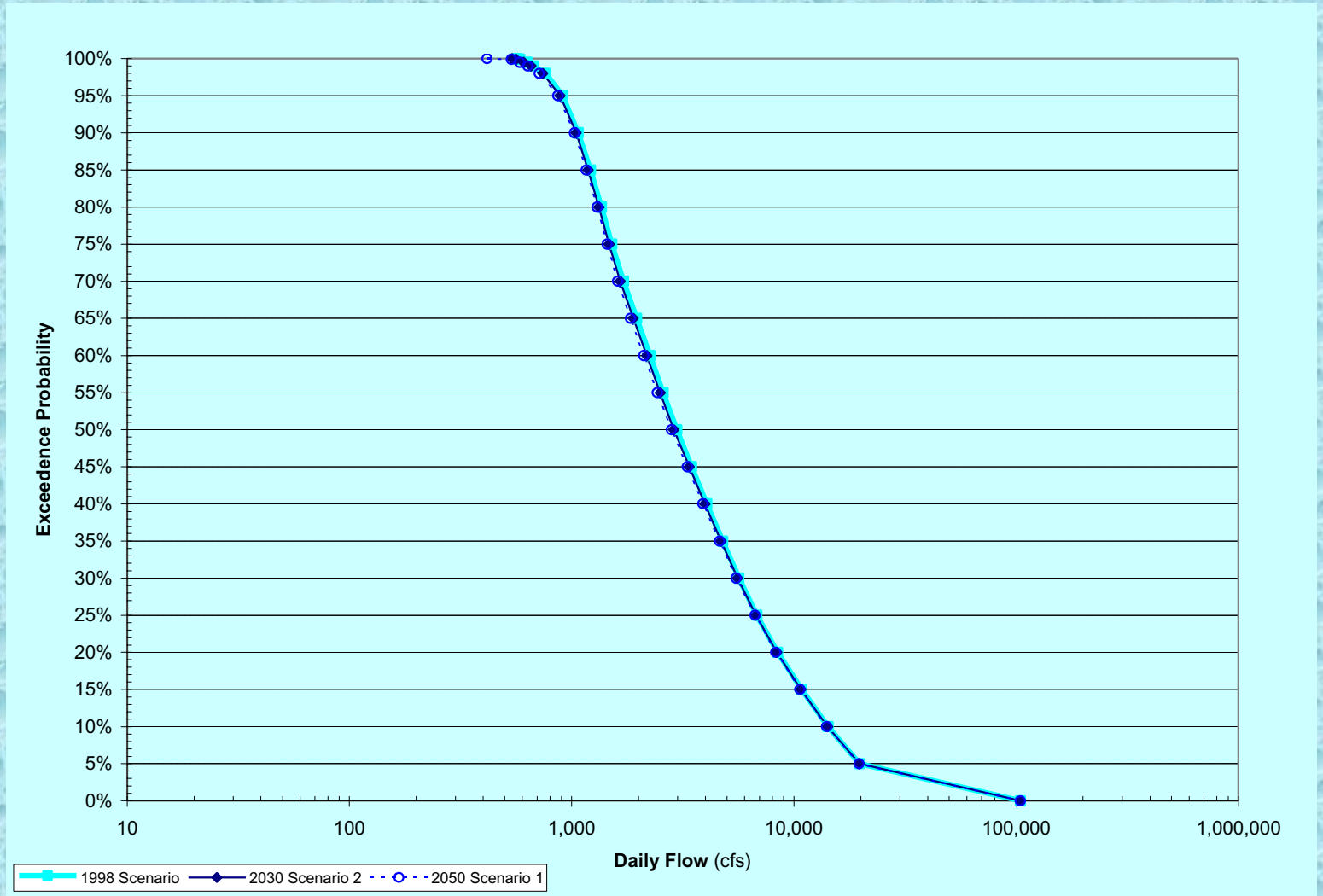
Flows at Lock & Dam #1



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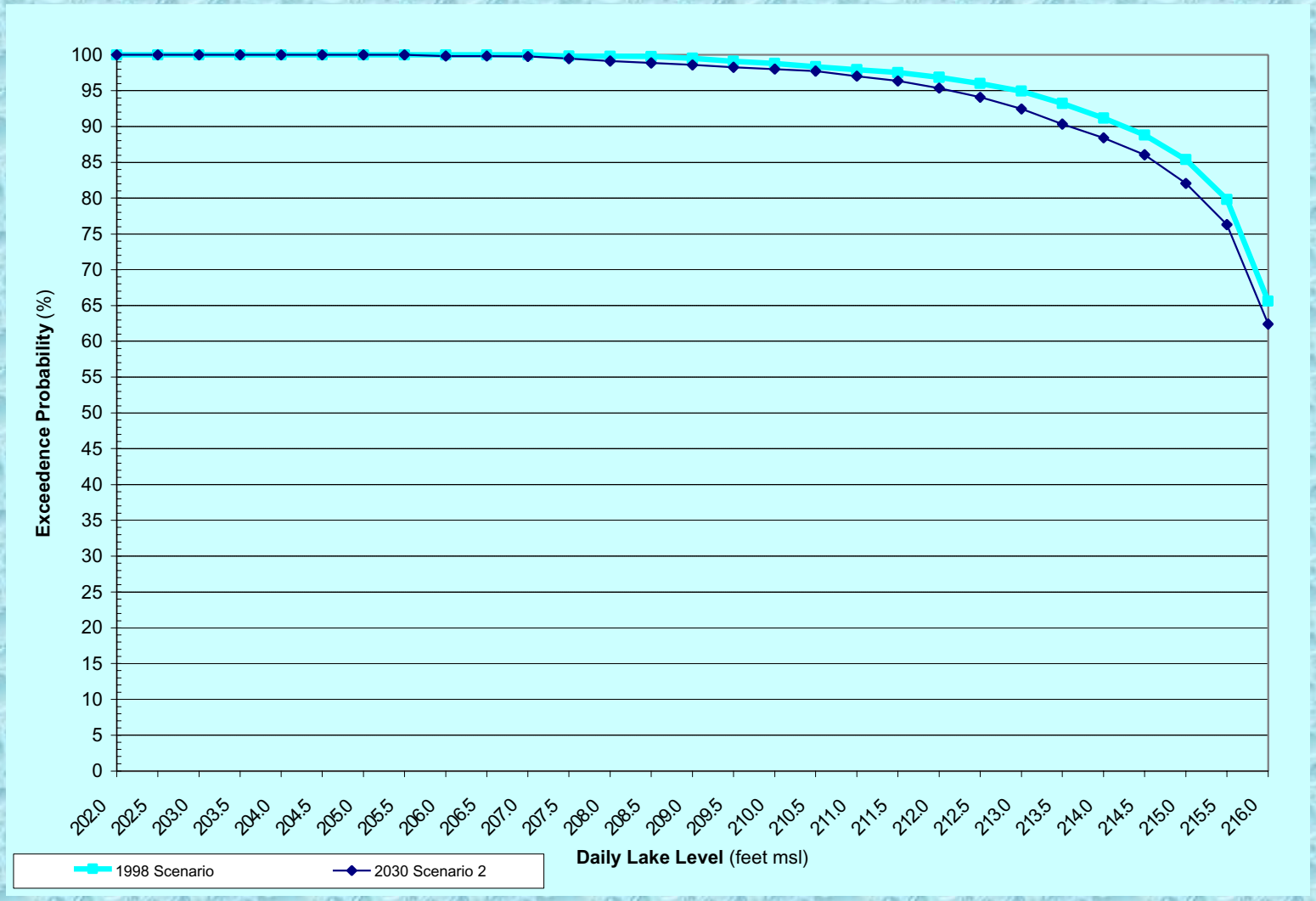
Jordan Lake Levels - Entire Year



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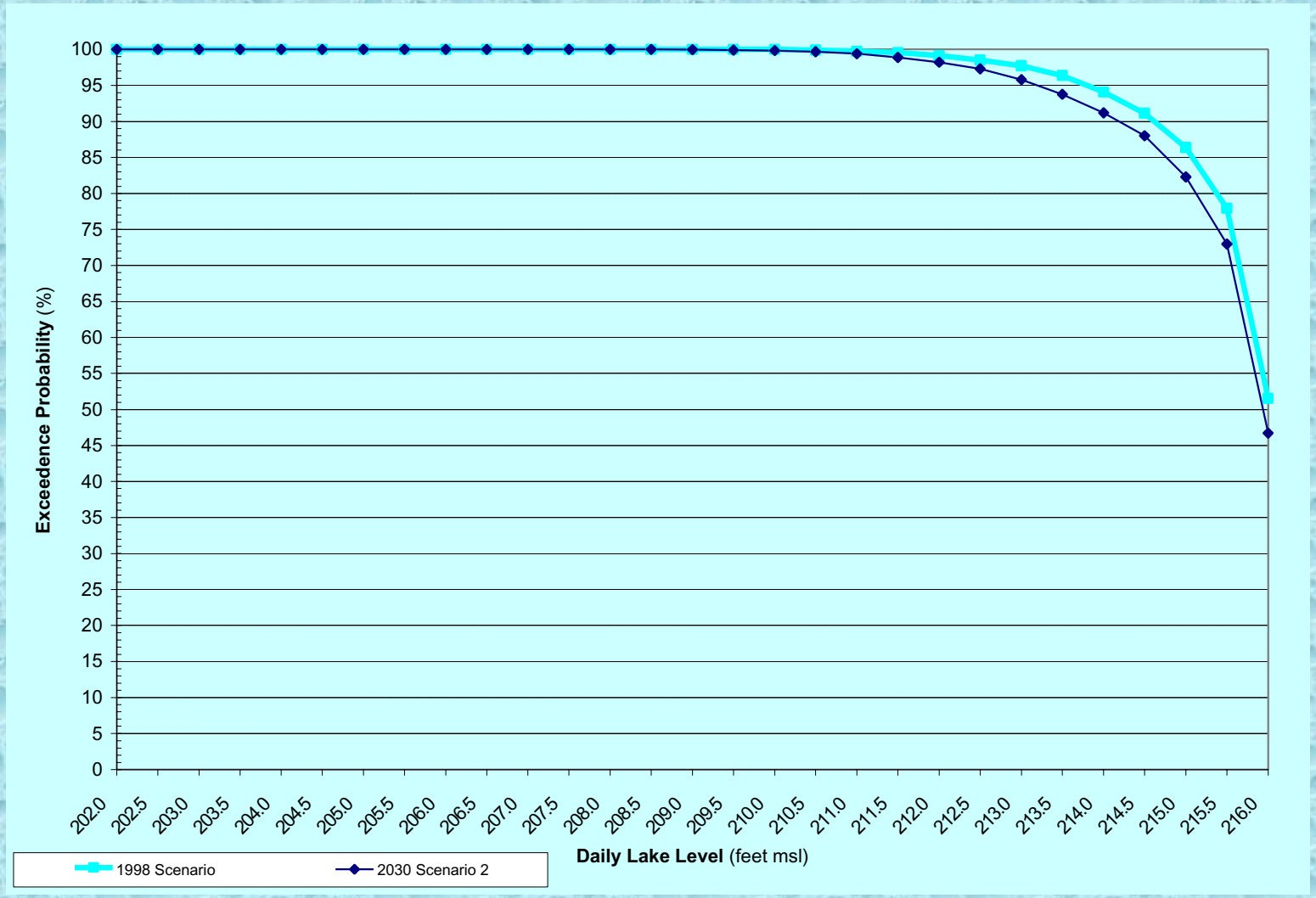
Jordan Lake Levels - May 1 to Sep 30



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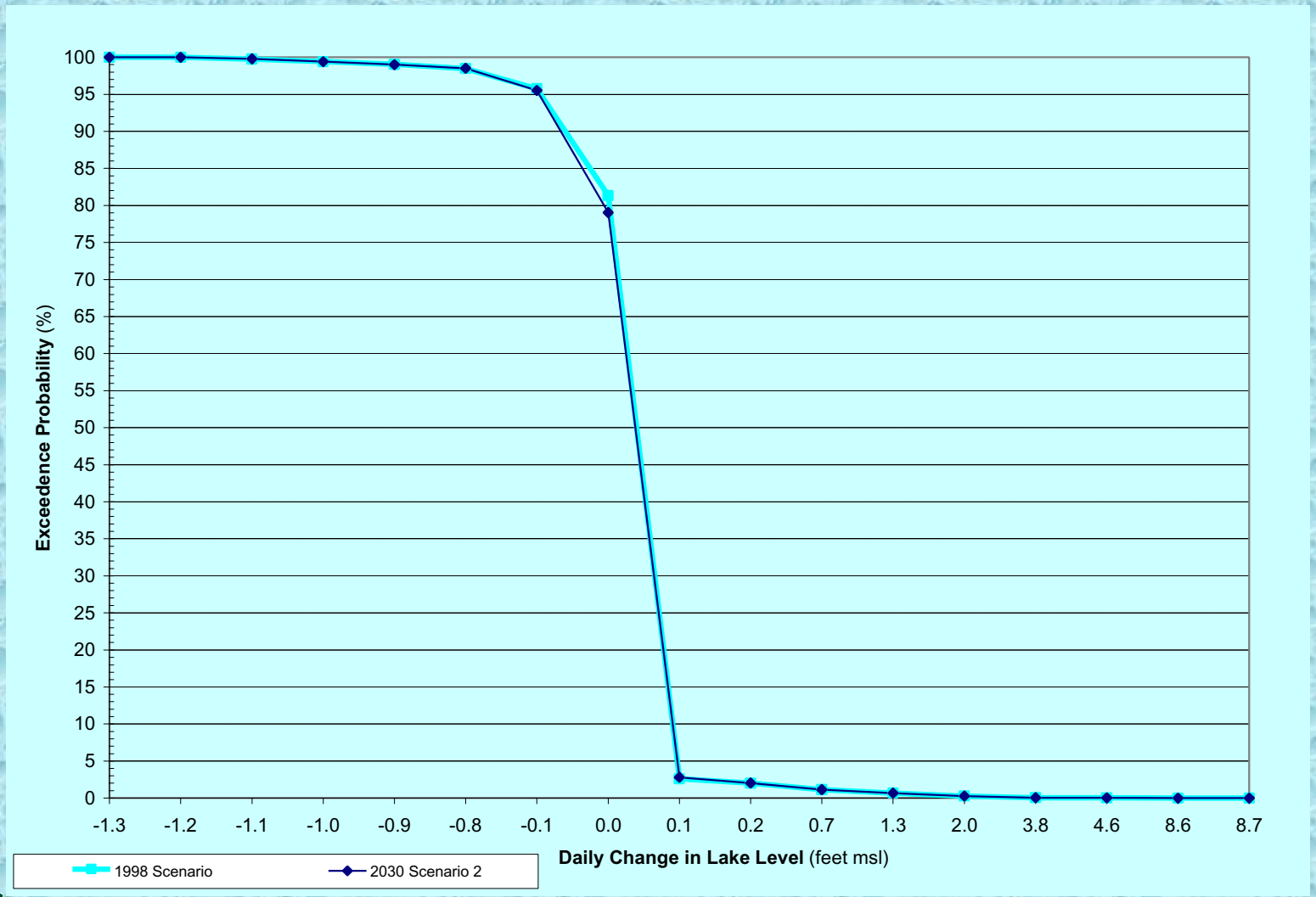
Change in Jordan Lake Levels - Apr 1 to Jun 30



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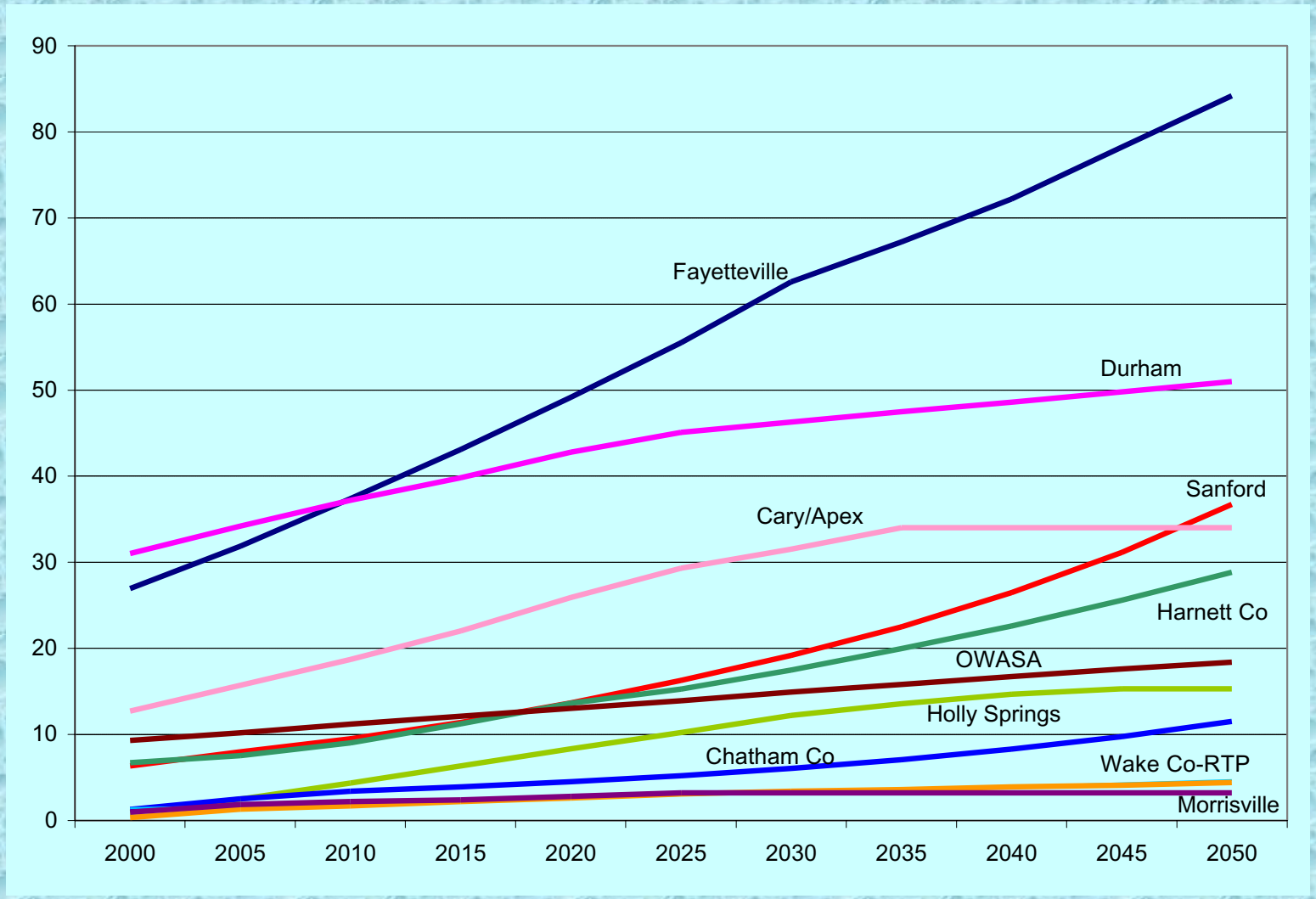
All Applicants



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DWR Recommendations

- All water supply needs are met through 2030
- All water supply needs downstream are met through 2050
- No significant impacts to lake levels or downstream flows

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DWR Recommendations

	Level I (mgd)	Level II (mgd)	**Total (mgd)**
Towns of Cary & Apex	32.0	0.0	**32.0**
Chatham County	6.0	0.0	**6.0**
City of Durham	10.0	0.0	**10.0**
City of Fayetteville	0.0	0.0	**0.0**
Harnett County	0.0	0.0	**0.0**
Town of Holly Springs	0.0	0.0	**0.0**
Town of Morrisville	3.5	0.0	**3.5**
Orange County	0.0	1.0	**1.0**
Orange Water & Sewer Authority	0.0	5.0	**5.0**
City of Sanford	0.0	0.0	**0.0**
Wake County - RTP	3.5	0.0	**3.5**
Total	55.0	6.0	**61.0**

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Proposed Allocation Condition

If an extreme drought or a water supply emergency caused by water contamination or infrastructure damage threatens the ability of a public water supply system to meet the public health and safety needs of its customers, the Secretary of DENR can make emergency allocations or reallocations of the water supply storage at Jordan Lake to respond to these emergencies. These emergency allocations or reallocations are limited to 30 days and may be renewed for one additional 30 day period. Before taking such an action, the Secretary shall consult with affected parties and shall specify conditions to protect all affected water users.

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